# Stimulsoft Reports

## User Manual

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# Stimulsoft Reports

## Product Line

***by Stimulsoft***

*Stimulsoft Reports is a set of reporting tools for .NET, ASP.NET, WPF, and Silverlight. They represent unique abilities for report creation. Report Designers of products have the full set of tools for developers which help them to create reports of any complexity as easy and fast as possible. It is possible to view created reports both in Windows and Web. And the most remarkable thing is that there is no need for a user to make any efforts to do it.*

*Stimulsoft Reports products are packed with great many samples of reports, projects, and flash tutorials. It is enough for a user to select a sample of a report, make some changes into the report structure, assign a data base, and print a report. The access to data bases can be made via such data sources as ADO.NET, business objects, arrays, and collections, XML, SQL, OleDB, Oracle, and Access etc. The list of supported data bases is constantly increasing.*

*Using visual wizards or a few code lines, ready reports can be exported to multiple formats such as PDF, XPS, XML, HTML, Excel, Word, RTF, TXT, CSV, EMF, GIF, Jpeg, BMP etc. Moreover, PDF documents, created using Stimulsoft Reports.Net, can be signed with the digital signature or encrypted.*

*Other features in Stimulsoft Reports include a full set of chart controls (Clustered Column, ClusteredBar, Area, Pie, Doughnut, Line, Spline, Spline Area, Stacked Bar, Stacked Column, Stacked Area, Stacked Line, Stacked Spline, Stacked Spline Area, Full-Stacked Column, Full-Stacked Bar, Full-Stacked Area, Full-Stacked Line, Full-Stacked Spline, Full-Stacked Spline Area) and a set of bar-codes (Data Matrix, PDF417, EAN-8, EAN-13, Code 39-extended etc).*

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# Part I

# Stimulsoft Reports Features

# 1. Stimulsoft Reports Features

This section describes the most important features of Stimulsoft Reports Products.

## 1.1. Stimulsoft Reports Product Line

### 1.1.1. Barcode

| Barcode | Reports. Net | Reports. Web | Reports.Wpf | Reports. Silverlight | Reports. Ultimate |
|---|---|---|---|---|---|
| **Linear Barcodes** | | | | | |
| **EAN/UPC based** | | | | | |
| EAN-128a | + | + | + | + | + |
| EAN-128b | + | + | + | + | + |
| EAN-128c | + | + | + | + | + |
| EAN-128 Auto | + | + | + | + | + |
| EAN-13 | + | + | + | + | + |
| EAN-8 | + | + | + | + | + |
| ISBN-10 | + | + | + | + | + |
| ISBN-13 | + | + | + | + | + |
| ITF-14 | + | + | + | + | + |
| JAN-13 | + | + | + | + | + |
| JAN-8 | + | + | + | + | + |
| UPC-A | + | + | + | + | + |
| UPC-E | + | + | + | + | + |
| UPC-Sup2 | + | + | + | + | + |
| UPC-Sup5 | + | + | + | + | + |
| **Other linear bar-codes** | | | | | |
| Australia Post 4-state | + | + | + | + | + |
| Royal Mail 4-state | + | + | + | + | + |

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| | | | | | |
|---|---|---|---|---|---|
| Code 11 | + | + | + | + | + |
| Code 128a | + | + | + | + | + |
| Code 128b | + | + | + | + | + |
| Code 128c | + | + | + | + | + |
| Code128 Auto | + | + | + | + | + |
| Code 39 | + | + | + | + | + |
| Code 39 Extended | + | + | + | + | + |
| Code 93 | + | + | + | + | + |
| Code 93 Extended | + | + | + | + | + |
| Codabar | + | + | + | + | + |
| Royal TPG Post KIX 4-State | + | + | + | + | + |
| FIM | + | + | + | + | + |
| 2 of 5 Interleaved | + | + | + | + | + |
| Msi | + | + | + | + | + |
| Pharmacode | + | + | + | + | + |
| Plessey | + | + | + | + | + |
| Postnet | + | + | + | + | + |
| 2 of 5 Standard | + | + | + | + | + |
| **2D Barcodes** | | | | | |
| DataMatrix | + | + | + | + | + |
| PDF417 | + | + | + | + | + |
| QR Code | + | + | + | + | + |

### 1.1.2. Charts

| Charts | Reports. Net | Reports. Web | Reports. Wpf | Reports. Silverlight | Reports. Ultimate |
|---|---|---|---|---|---|
| **Column Area** | | | | | |

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| | | | | | |
|---|---|---|---|---|---|
| Clustered Column | + | + | + | + | + |
| Stacked Column | + | + | + | + | + |
| Full-Stacked Column | + | + | + | + | + |
| **Bar Area** | | | | | |
| Clustered Bar | + | + | + | + | + |
| Stacked Bar | + | + | + | + | + |
| Full-Stacked Bar | + | + | + | + | + |
| **Pie Area** | | | | | |
| Pie | + | + | + | + | + |
| Doughnut | + | + | + | + | + |
| **Line Area** | | | | | |
| Line | + | + | + | + | + |
| Stepped Line | + | + | + | + | + |
| Stacked Line | + | + | + | + | + |
| Full-Stacked Line | + | + | + | + | + |
| **Area** | | | | | |
| Area | + | + | + | + | + |
| Stepped Area | + | + | + | + | + |
| Stacked Area | + | + | + | + | + |
| Full-Stacked Area | + | + | + | + | + |
| **Gantt Area** | | | | | |
| Gantt | + | + | + | + | + |
| **Spline** | | | | | |
| Spline | + | + | + | + | + |
| Stacked Spline | + | + | + | + | + |
| Full-Stacked Spline | + | + | + | + | + |
| **Spline Area** | | | | | |

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| | | | | | |
|---|---|---|---|---|---|
| Spline Area | + | + | + | + | + |
| Stacked Spline Area | + | + | + | + | + |
| Full-Stacked Spline Area | + | + | + | + | + |
| **Scatter Area** | | | | | |
| Scatter | + | + | + | + | + |
| Scatter Line | + | + | + | + | + |
| Scatter Spline | + | + | + | + | + |

### 1.1.3. Components

| Components | Reports. Net | Reports. Web | Reports. Wpf | Reports. Silverlight | Reports. Ultimate |
|---|---|---|---|---|---|
| **Bands** | | | | | |
| Report Title | + | + | + | + | + |
| Report Summary | + | + | + | + | + |
| Page Header | + | + | + | + | + |
| Page Footer | + | + | + | + | + |
| Group Header | + | + | + | + | + |
| Group Footer | + | + | + | + | + |
| Header | + | + | + | + | + |
| Footer | + | + | + | + | + |
| Column Header | + | + | + | + | + |
| Column Footer | + | + | + | + | + |
| Data | + | + | + | + | + |
| Hierarchical Data | + | + | + | + | + |
| Child | + | + | + | + | + |
| Empty Data | + | + | + | + | + |
| Overlay | + | + | + | + | + |

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| | | | | | |
|---|---|---|---|---|---|
| **Cross Bands** | | | | | |
| Cross Tab | + | + | + | | + |
| Cross-Group Header | + | + | + | + | + |
| Cross-Group Footer | + | + | + | + | + |
| Cross-Header | + | + | + | + | + |
| Cross-Footer | + | + | + | + | + |
| Cross-Data | + | + | + | + | + |
| **Components** | | | | | |
| Bar-Code | + | + | + | + | + |
| Chart | + | + | + | + | + |
| Check Box | + | + | + | + | + |
| Clone | + | + | + | + | + |
| Column Header | + | + | + | + | + |
| Horizontal Line | + | + | + | + | + |
| Image | + | + | + | + | + |
| Panel | + | + | + | + | + |
| Rectangle | + | + | + | + | + |
| Rich Text | + | + | + | | + |
| Rounded Rectangle | + | + | + | + | + |
| Shape | + | + | + | + | + |
| Sub-Report | + | + | + | + | + |
| Table | + | | + | + | + |
| Text | + | + | + | + | + |
| Text in Cells | + | + | + | + | + |
| Vertical Line | + | + | + | + | + |
| Watermark | + | + | + | + | + |
| Win Control | + | | | | + |
| Zip Code | + | + | + | + | + |

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### 1.1.4. Controls

| Controls | Reports. Net | Reports. Web | Reports. Wpf | Reports. Silverlight | Reports. Ultimate |
|---|---|---|---|---|---|
| Label | + | | + | | + |
| TextBox | + | | + | | + |
| GroupBox | + | | + | | + |
| Button | + | | + | | + |
| CheckBox | + | | + | | + |
| RadioButton | + | | + | | + |
| ListBox | + | | + | | + |
| ComboBox | + | | + | | + |
| LookUpBox | + | | + | | + |
| CheckedListBox | + | | | | + |
| DateTimePicker | + | | + | | + |
| NumericUpDown | + | | + | | + |
| PictureBox | + | | + | | + |
| Grid | + | | | | + |
| TreeView | + | | | | + |
| ListView | + | | | | + |
| Panel | + | | + | | + |
| RichTextBox | + | | + | | + |

### 1.1.5. Database Packs

| Database | Reports. | Reports. | Reports. | Reports. | Reports. |
|---|---|---|---|---|---|

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| Packs | Net | Web | Wpf | Silverlight | Ultimate |
|---|---|---|---|---|---|
| dot Connect Universal | + | + | + | + | + |
| XML | + | + | + | + | + |
| MS SQL | + | + | + | + | + |
| ODBC | + | + | + | + | + |
| OLEDB | + | + | + | + | + |
| Business Objects | + | + | + | + | + |
| EffiProz | + | | + | | + |
| Firebird | + | + | + | + | + |
| IBM Db2 | + | + | + | + | + |
| MS Access | + | + | + | + | + |
| MySQL ConnectorNet | + | + | + | + | + |
| MySQL CoreLab | + | + | + | + | + |
| Oracle | + | + | + | + | + |
| Oracle Data Provider for . NET | + | + | + | + | + |
| PostgreSQL | + | + | + | + | + |
| PostgreSQL CoreLab | + | + | + | + | + |
| SqlCe | + | + | + | + | + |
| SQLite | + | + | + | + | + |
| VistaDB | + | + | + | + | + |
| Uni Direct | + | + | + | + | + |
| Sybase Advantage Database Server | + | + | + | + | + |
| Sybase Adaptive Server Enterprise | + | + | + | + | + |
| Informix | + | + | + | + | + |

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## 1.1.6. Exports

| Exports | Reports. Net | Reports. Web | Reports. Wpf | Reports. Silverlight | Reports. Ultimate |
|---|---|---|---|---|---|
| **Document file** | | | | | |
| MRT | + | + | + | + | + |
| MDC | + | + | + | + | + |
| MDZ | + | + | + | + | + |
| MDX | + | + | + | + | + |
| MRX | + | + | + | + | + |
| MRZ | + | + | + | + | + |
| **Formats with fixed page layout** | | | | | |
| PDF | + | + | + | + | + |
| Exporting Images | + | + | + | + | + |
| Embedded fonts | + | + | + | + | + |
| Digital signature | + | + | + | + | + |
| Encryption | + | + | + | + | + |
| Microsoft XPS | + | + | + | + | + |
| Exporting Images | + | + | + | + | + |
| Microsoft Power Point | + | + | + | + | + |
| **Web documents** | | | | | |
| HTML | + | + | + | + | + |
| MHT | + | + | + | + | + |
| **Text formats** | | | | | |
| Text | + | + | + | + | + |
| RTF | + | + | + | + | + |
| Microsoft Word 2007 | + | + | + | + | + |

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| | | | | | |
|---|---|---|---|---|---|
| OpenDocument Text | + | + | + | + | + |
| **Spreadsheets** | | | | | |
| Microsoft Excel | + | + | + | + | + |
| Microsoft Excel XML | + | + | + | + | + |
| Microsoft Excel 2007 | + | + | + | + | + |
| OpenDocument Calc | + | + | + | + | + |
| **Data** | | | | | |
| CSV | + | + | + | + | + |
| dBase DBF | + | + | + | + | + |
| XML | + | + | + | + | + |
| DIF | + | + | + | + | + |
| SYLK | + | + | + | + | + |
| **Images** | | | | | |
| BMP | + | + | + | + | + |
| GIF | + | + | + | + | + |
| JPEG | + | + | + | + | + |
| PCX | + | + | + | + | + |
| PNG | + | + | + | + | + |
| TIFF | + | + | + | + | + |
| **Vector images** | | | | | |
| Windows Metafile | + | + | + | + | + |
| SVG | + | + | + | + | + |
| Compressed SVG | + | + | + | + | + |

## 1.1.7. Localizations

| Localizations | Reports. | Reports. | Reports. | Reports. | Reports. |
|---|---|---|---|---|---|

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| | Net | Web | Wpf | Silverlight | Ultimate |
|---|---|---|---|---|---|
| Arabic | + | + | + | + | + |
| Belarussian | + | + | + | + | + |
| Bulgarian | + | + | + | + | + |
| Chinese (Simplified) | + | + | + | + | + |
| Chinese (Traditional) | + | + | + | + | + |
| Croatian | + | + | + | + | + |
| Czech | + | + | + | + | + |
| Dutch | + | + | + | + | + |
| English | + | + | + | + | + |
| Farsi | + | + | + | + | + |
| French | + | + | + | + | + |
| Georgian | + | + | + | + | + |
| German | + | + | + | + | + |
| Hungarian | + | + | + | + | + |
| Italian | + | + | + | + | + |
| Lithuanian | + | + | + | + | + |
| Polish | + | + | + | + | + |
| Portuguese (Brazil) | + | + | + | + | + |
| Romanian | + | + | + | + | + |
| Russian | + | + | + | + | + |
| Serbian | + | + | + | + | + |
| Slovak | + | + | + | + | + |
| Spanish | + | + | + | + | + |
| Swedish | + | + | + | + | + |
| Turkish | + | + | + | + | + |
| Ukrainian | + | + | + | + | + |

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### 1.1.8. Viewers

| Controls | Reports. Net | Reports. Web | Reports. Wpf | Reports. Silverlight | Reports. Ultimate |
|---|---|---|---|---|---|
| SilverlightClientServerViewer | | | + | + | + |
| SilverlightViewerSL (native) | | | | + | + |
| WebViewer | | + | | | + |
| WebViewerFx | | + | | | + |
| WinFormsViewer | + | | | | + |
| WPF Dot-Matrix Viewer | | | | | + |
| WinForms Dot-Matrix Viewer | + | | + | | + |
| WpfViewer | | | + | | + |

### 1.1.9. User Interface

| User Interface | Reports. Net | Reports. Web | Reports. Wpf | Reports. Silverlight | Reports. Ultimate |
|---|---|---|---|---|---|
| Standard (Microsoft Office 2003) | | | | | |
| Blue | + | + | + | | + |
| Silver | + | + | + | | + |
| Black | + | + | + | | + |
| Ribbon (Microsoft Office 2007) | | | | | |
| Blue | + | | + | + | + |
| Silver | + | | + | + | + |
| Black | + | | + | | + |
| Ribbon (Microsoft Office 2010) | | | | | |
| Blue | + | | + | + | + |

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| | | | | | |
|---|---|---|---|---|---|
| Silver | + | | + | + | + |
| Black | + | | + | + | + |
| Black | | | + | | + |
| Vista | + | | | | + |

## 1.1.10. Reporting Features

| Reporting Features | Reports. Net | Reports. Web | Reports. Wpf | Reports. Silverlight | Reports. Ultimate |
|---|---|---|---|---|---|
| Alpha blending | + | + | + | + | + |
| Data aggregation | + | + | + | + | + |
| Data filtering | + | + | + | + | + |
| Data grouping | + | + | + | + | + |
| ToolTips | + | + | + | + | + |
| Data sorting | + | + | + | + | + |
| Dynamic sorting | + | + | + | + | + |
| Different page sizes | + | + | + | + | + |
| Drag & Drop | + | + | + | + | + |
| Expressions | | | | | |
| Text Expressions | + | + | + | + | + |
| Calculating Values In Expressions | + | + | + | + | + |
| Multi-line Expressions | + | + | + | + | + |
| Conditional Expressions | + | + | + | + | + |
| Aliases In Expressions | + | + | + | + | + |
| Appearance | | | | | |
| Borders | + | + | + | + | + |

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| | | | | | |
|---|---|---|---|---|---|
| Horizontal Alignment | + | + | + | + | + |
| Vertical Alignment | + | + | + | + | + |
| Styles | + | + | + | + | + |
| Alternate Row Styles | + | + | + | + | + |
| Conditional formatting | | | | | |
| Value Condition | + | + | + | + | + |
| Operators | + | + | + | + | + |
| Expression Condition | + | + | + | + | + |
| Multi Part Conditions | + | + | + | + | + |
| Output text parameters | | | | | |
| Multiline text | + | + | + | + | + |
| Trimming in the end of text line | + | + | + | + | + |
| Prevent show ing incompletely visible lines | + | + | + | + | + |
| Lines of underlining | + | + | + | + | + |
| Text rotation | + | + | + | + | + |
| Processing Duplicates | + | + | + | + | + |
| Text formatting | | | | | |
| Standard | + | + | + | + | + |
| Numerical | + | + | + | + | + |
| Currency | + | + | + | + | + |
| Date | + | + | + | + | + |
| Time | + | + | + | + | + |
| Percentage | + | + | + | + | + |
| Boolean | + | + | + | + | + |
| Custom | + | + | + | + | + |
| Formatting in | + | + | + | + | + |

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| | | | | | |
|---|---|---|---|---|---|
| text | | | | | |
| HTML tags | | | | | |
| <font> | + | + | + | + | + |
| <b> | + | + | + | + | + |
| <br> | + | + | + | + | + |
| <i> | + | + | + | + | + |
| <u> | + | + | + | + | + |
| <s> | + | + | + | + | + |
| <sup> | + | + | + | + | + |
| <sub> | + | + | + | + | + |
|  | + | + | + | + | + |
| <p> | + | + | + | + | + |
| <background-color> | + | + | + | + | + |
| <text-align> | + | + | + | + | + |
| <letter-spacing> | + | + | + | + | + |
| <word-spacing> | + | + | + | + | + |
| <line-height> | + | + | + | + | + |
| Special Symbols | + | + | + | + | + |
| Rich Text | + | + | + | + | + |
| Images | | | | | |
| Loading image from file | + | + | + | + | + |
| Loading image from report code | + | + | + | + | + |
| Loading image from data field | + | + | + | + | + |
| Autosize | | | | | |
| Can Grow | + | + | + | + | + |
| Can Shrink | + | + | + | + | + |
| Automatically resizing text | + | + | + | + | + |
| Automatically resizing panels | + | + | + | + | + |

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| | | | | | |
|---|---|---|---|---|---|
| Automatically Resizing Bands | + | + | + | + | + |
| Primitives | | | | | |
| Arrow | + | + | + | + | + |
| Diagonal Line Down | + | + | + | + | + |
| Diagonal Line Up | + | + | + | + | + |
| Horizontal Line | + | + | + | + | + |
| Left and Right Line | + | + | + | + | + |
| Oval | + | + | + | + | + |
| Rounded Rectangle | + | + | + | + | + |
| Top and Bottom Line | + | + | + | + | + |
| Triangle | + | + | + | + | + |
| Vertical Line | + | + | + | + | + |
| Complex Arrow | + | + | + | + | + |
| Bent Arrow | + | + | + | + | + |
| Chevron | + | + | + | + | + |
| Division | + | + | + | + | + |
| Equal | + | + | + | + | + |
| Flow chart: Card | + | + | + | + | + |
| Flow chart: Collate | + | + | + | + | + |
| Flow chart: Decision | + | + | + | + | + |
| Flow chart: Manual Input | + | + | + | + | + |
| Flow chart: Off Page Connector | + | + | + | + | + |
| Flow chart: Preparation | + | + | + | + | + |
| Flow chart: Sort | + | + | + | + | + |
| Frame | + | + | + | + | + |

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| | | | | | |
|---|---|---|---|---|---|
| Minus | + | + | + | + | + |
| Multiply | + | + | + | + | + |
| Parallelogram | + | + | + | + | + |
| Plus | + | + | + | + | + |
| Regular: Pentagon | + | + | + | + | + |
| Trapezoid | + | + | + | + | + |
| Snip Same Side Corner Rectangle | + | + | + | + | + |
| Snip Diagonal Side Corner Rectangle | + | + | + | + | + |
| Scripts | + | + | + | + | + |
| Watermark | | | | | |
| Text | + | + | + | + | + |
| Image | + | + | + | + | + |
| Pagination | + | + | + | + | + |
| Navigation bar | + | + | + | + | + |
| Formatted text | + | + | + | + | + |
| Gradient fills | + | + | + | + | + |
| Hierarchical reports | + | + | + | + | + |
| Hyperlink embedding | + | + | + | + | + |
| Multiple reporting bands on a page | + | + | + | + | + |
| Page overlays | + | + | + | + | + |
| Parameterized Reports | + | + | + | + | + |
| Pivot tables | + | + | + | + | + |
| Segmented pages | + | + | + | + | + |
| Report style sheet | + | + | + | + | + |
| Right-To-Left | | | | | |

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| | | | | | |
|---|---|---|---|---|---|
| Text component | + | + | + | + | + |
| Text In Cells component | + | + | + | + | + |
| Cross Table component | + | + | + | + | + |
| Columns on page | + | + | + | + | + |
| Chart Component | + | + | + | + | + |
| Columns in Data Band | + | + | + | + | + |
| WinForms report viewer | + | + | + | + | + |
| Unicode, internationalization support | + | + | + | + | + |

### 1.1.11. Tools

| Tools | Reports. Net | Reports. Web | Reports. Wpf | Reports. Silverlight | Reports. Ultimate |
|---|---|---|---|---|---|
| Configurator | + | | | | + |
| Import. CrystalReports | + | + | + | | + |
| Installer | + | + | + | | + |
| Report Browser | + | | + | | + |
| Report Checker | + | | + | | + |
| Import.RTF | + | | + | | + |
| StyleDesigner | + | + | + | | + |

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## 1.1.12. Report Wizards

| Report Wizards | Reports. Net | Reports. Web | Reports. Wpf | Reports. Silverlight | Reports. Ultimate |
|---|---|---|---|---|---|
| Standard Report | + | + | + | | + |
| Master-Detail Report | + | + | + | | + |
| Label Report | + | + | + | | + |
| Chart | + | | + | | + |
| Cross-Tab | + | + | + | | + |

## 1.1.13. Viewer Features

| Viewer Features | Reports. Net | Reports. Web | Reports. Wpf | Reports. Silverlight | Reports. Ultimate |
|---|---|---|---|---|---|
| Add new page | + | | + | + | + |
| Automatic page scrolling / resizing | + | + | + | + | + |
| Create reports dynamically | + | + | + | + | + |
| Bookmarks | + | + | + | + | + |
| Drill-Down | + | + | + | + | + |
| Navigation bar | + | + | + | + | + |
| Page navigation | + | + | + | + | + |
| Page View Modes | + | + | + | + | + |
| Single Page | + | + | + | + | + |
| Continuous | + | + | + | + | + |
| Multiple Pages | + | + | + | + | + |
| Print/Preview | + | + | + | + | + |

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| | | | | | |
|---|---|---|---|---|---|
| Report paging | + | + | + | + | + |
| Send E-mail | + | | + | + | |
| Report viewer customization | + | + | + | + | + |
| Report caching | + | + | + | + | |
| Search Panel | + | + | + | + | + |
| Thumbnails panel | + | + | + | + | + |
| ToolTips | + | + | + | + | + |
| Web report caching | + | + | + | + | + |
| Zooming | + | + | + | + | + |

## 1.1.14. Reports

| Reports | Reports. Net | Reports. Web | Reports. Wpf | Reports. Silverlight | Reports. Ultimate |
|---|---|---|---|---|---|
| Basic reports | + | + | + | + | + |
| Reports with Columns | + | + | + | + | + |
| Master-Details Reports | + | + | + | + | + |
| Reports with Groups | + | + | + | + | + |
| Hierarchical Reports | + | + | + | + | + |
| Interactive Reports | + | + | + | + | + |
| Tables | + | | + | + | + |
| Cross-Tab Reports | + | + | + | + | + |
| Reports with Empty Bands | + | + | + | + | + |
| Sub-reports | + | + | + | + | + |

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## 1.1.15. Functions

| Functions | Reports. Net | Reports. Web | Reports. Wpf | Reports. Silverlight | Reports. Ultimate |
|---|---|---|---|---|---|
| Date | | | | | |
| DateDiff | + | + | + | | + |
| DateSerial | + | + | + | + | + |
| Day | + | + | + | + | + |
| DayOfWeek | + | + | + | | + |
| DayOfYear | + | + | + | | + |
| Hour | + | | + | + | + |
| Minute | + | + | + | + | + |
| Month | + | + | + | + | + |
| Second | + | + | + | + | + |
| TimeSerial | + | + | + | + | + |
| Year | + | + | + | + | + |
| Math | | | | | |
| Abs | + | + | + | + | + |
| Asin | + | + | + | + | + |
| Atan | + | + | + | + | + |
| Ceiling | + | + | + | + | + |
| Cos | + | + | + | + | + |
| Div | + | + | + | + | + |
| Exp | + | + | + | + | + |
| Floor | + | + | + | + | + |
| Log | + | + | + | + | + |
| Maximum | + | + | + | + | + |
| Minimum | + | + | + | + | + |
| Round | + | + | + | + | + |
| Sign | + | + | + | + | + |

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| | | | | | |
|---|---|---|---|---|---|
| Sin | + | + | + | + | + |
| Sqrt | + | + | + | + | + |
| Tan | + | + | + | + | + |
| Truncate | + | + | + | + | + |
| Print State | | | | | |
| IsNull | + | + | + | | + |
| Next | + | + | + | | + |
| NextIsNull | + | + | + | | + |
| Previous | + | + | + | | + |
| PreviousIsNull | + | + | + | | + |
| Programming Shortcut | | | | | |
| Choose | + | + | + | | + |
| IIF | + | + | + | + | + |
| Switch | + | + | + | | + |
| Strings | | | | | |
| Arabic(int) | + | | + | + | + |
| Arabic(string) | + | | + | + | + |
| DateToStr | + | + | + | | + |
| Insert | + | + | + | + | + |
| Length | + | + | + | + | + |
| Persian(int) | + | | + | + | + |
| Persian (string) | + | | + | + | + |
| Remove | + | + | + | + | + |
| Replace | + | + | + | + | + |
| Roman | + | + | + | | + |
| Substring | + | + | + | + | + |
| ToCurrencyWords | + | + | + | | + |
| ToLowerCase | + | + | + | + | + |
| ToProperCase | + | + | + | | + |
| ToUpperCase | + | + | + | + | + |

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| | | | | | |
|---|---|---|---|---|---|
| ToWords | + | + | + | | + |
| Trim | + | + | + | + | + |
| TryParselDecimal | + | + | + | | + |
| TryParselDouble | + | + | + | | + |
| TryParselLong | + | + | + | | + |
| Totals | | | | | |
| Avg | + | + | + | + | + |
| Count | + | + | + | + | + |
| First | + | + | + | + | + |
| Last | + | + | + | + | + |
| Max | + | + | + | + | + |
| Median | + | + | + | + | + |
| Min | + | + | + | + | + |
| Mode | + | + | + | + | + |
| Sum | + | + | + | + | + |

## 1.1.16. System Variables

| System Variables | Reports. Net | Reports. Web | Reports. Wpf | Reports. Silverlight | Reports. Ultimate |
|---|---|---|---|---|---|
| Column | + | + | + | + | + |
| Line | + | + | + | + | + |
| LineThrough | + | + | + | + | + |
| LineABC | + | + | + | + | + |
| LineRoman | + | + | + | + | + |
| GroupLine | + | + | + | + | + |
| PageNumber | + | + | + | + | + |
| PageNumberThrough | + | + | + | + | + |
| PageNofM | + | + | + | + | + |

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| | | | | | |
|---|---|---|---|---|---|
| PageNofMThrough | + | + | + | + | + |
| TotalPageCount | + | + | + | + | + |
| TotalPageCountThrough | + | + | + | + | + |
| IsFirstPage | + | + | + | + | + |
| IsFirstPageThrough | + | + | + | + | + |
| IsLastPageThrough | + | + | + | + | + |
| IsLastPageThrough | + | + | + | + | + |
| ReportAlias | + | + | + | + | + |
| ReportAuthor | + | + | + | + | + |
| ReportChanged | + | + | + | + | + |
| ReportCreated | + | + | + | + | + |
| ReportDescription | + | + | + | + | + |
| ReportName | + | + | + | + | + |
| Time | + | + | + | + | + |
| Today | + | + | + | + | + |

## 1.1.17. Product Comparison

| Product Comparison | Reports. Net | Reports. Web | Reports. Wpf | Reports. Silverlight | Reports. Ultimate |
|---|---|---|---|---|---|
| WinForms Viewer | + | | | | + |
| WinForms Dot-Matrix Viewer | + | | | | + |
| WinForms Reports Designer | + | | | | + |

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| | | | | | |
|---|---|---|---|---|---|
| WPF Viewer | | | + | | + |
| WPF Dot-Matrix Viewer | | | + | | + |
| WPF Reports Designer | | | + | | + |
| Silverlight Viewer (Client/Server) | | | + | + | + |
| Silverlight Reports Designer (Client/Server) | | | | + | + |
| Silverlight Viewer | | | | + | + |
| Standalone AIR Designer | | | | | |
| Silverlight Reports Designer | | | | + | + |
| Web Viewer | | + | | | + |
| Web Viewer.Fx | | + | | | + |
| Web Reports Designer | | + | | | + |
| Standalone Report Designer | | + | + | + | + |
| Report Engine (.NET core) | + | + | + | | + |
| Report Engine (Fx core) | | | | | |
| Report Engine (Silverlight core) | | | | + | + |
| Source Code Available | + | + | + | + | + |

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## 1.1.18. System Requirements

| System Requirements | Reports. Net | Reports. Web | Reports. Wpf | Reports. Silverlight | Reports. Ultimate |
|---|---|---|---|---|---|
| .NET Framework 1.1 (version 2008.1) | + | | | | + |
| .NET Framework 2.0 | + | + | | | + |
| .NET Framework 3.0 | + | + | | | + |
| .NET Framework 3.5 | + | + | + | | + |
| .NET Framework 4.0 | + | + | + | + | + |
| Microsoft Visual Studio 2005 | + | + | | | + |
| Microsoft Visual Studio 2008 | + | + | + | | + |
| Microsoft Visual Studio 2010 | + | + | + | + | + |
| Microsoft Expression Blend | | | | + | + |
| Flash Builder 4 | | | | | |
| Adobe Flash Player 10 and higher | | + | | | + |
| Product Architecture | | | | | |
| x86 | + | + | + | + | + |
| x64 | + | + | + | + | + |
| Type of Component | | | | | |

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| | | | | | |
|---|---|---|---|---|---|
| .NET WinForms | + | + | + | + | + |
| ASP.NET | + | + | + | + | + |
| WPF | + | + | + | + | + |
| Silverlight | | | | + | + |
| PHP | | | | | |
| Flex | | | | | |
| WCF | | | | + | + |
| Supported OS | | | | | |
| Windows 90 | + | + | + | + | + |
| Windows ME | + | + | + | + | + |
| Windows 2000 | + | + | + | + | + |
| Windows Server 2003 | + | + | + | + | + |
| Windows XP | + | + | + | + | + |
| Windows Vista | + | + | + | + | + |
| Windows 7 | + | + | + | + | + |
| Linux | | | | | |

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# Part II

# Report Internals

# 2. Report Internals

This section describes the internal components and features of a Stimulsoft report, including Expressions, Appearance, Text Formatting, Barcodes, Watermarks and more.

## 2.1. Expressions

Expressions are a key part of Stimulsoft Reports - without them it would not be possible to produce any reports at all. An expression is a combination of one or more of the following:

- Text;
- Mathematical and Logical operators;
- Constants;
- Functions;
- Field names;
- Controls;
- Properties.

Stimulsoft Reports processes the expressions defined in a report in order to calculate the value to be displayed or printed for each one. This value is saved and can be used in further calculations when generating the report output.

The most common expressions used in the report generator are text expressions. These expressions are used to define any text displayed or printed in the report that is not the subject of any calculation such as a text heading. Text expressions are always converted into strings.

### 2.1.1. Text Expressions

The simplest expressions are Text expressions. For example:

```
MyText
```

```
12345
```

```
Test
```

All three expressions above consist of one string and there are no calculations - the expression will

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be printed in the report exactly as it has been defined. Such expressions are typically used to indicate simple string constants, column names, reports, links etc.

## 2.1.2. Calculating Values in Expressions

An expression can contain many different types of variable as well as functions and field values from databases. These various parts can be combined to calculate a value to be printed or displayed within a report.

### Using Code in an Expression

When calculating a value within an expression you may also include code written in the programming language of a report. Curly braces (the “{“ and “}” symbols) are used to separate code item from other text. The opening brace symbol “{“ indicates the beginning of a calculation. The closing brace symbol “}” indicates the end of a calculation. The code between symbols is calculated and the value included in the result of calculation. In text expressions the result of the calculation is automatically converted into a string. For example, if you enter the following expression:

Value = {1 + 2}

then after calculation the result appearing in the report will be:

Value = 3

### Multiple Code Insertions

When using calculations an unlimited number of code insertions are allowed in any one expression. For example, if you enter the following expression:

```
ValueA = {1 + 2}, ValueB = {2 + 3}
```

then after calculation the result appearing in the report will be:

```
ValueA = 3, ValueB = 5
```

### Nested Code Insertions

When you perform calculations in an expression the nesting of code sections is not allowed. For example, the following expression is not correct and will cause the calculation to fail:

```
Value = {1 + 2 + {2 + 3}}
```

**IMPORTANT:** Code nesting is not allowed when making calculations in expressions.

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## 2.1.3. Multi-line Expressions

It is possible for a single expression to output multiple lines of text within a report. To create a multi-line expression simply insert a line feed before any new line. You can do this by simply pressing the Enter key at the appropriate place in the code editor. There is no limit to the number of lines that can be included in an expression. For example, if you enter the following expression:

```
Value:
{1+2}
```

then after calculation the result appearing in the report will be:

```
Value:
3
```

In other words, the text output will contain two lines.

**Note:** An expression may contain any number of lines.

Using Code in Multi Line Expressions

Multi line expressions do not have limitations on using code to calculate values other than those for single line expressions.

## 2.1.4. Using Dictionary Variables

You can create variables in the designer data dictionary which can then be used in expressions. When you specify the name of a variable in the expression the value of the variable will be included in the report. The syntax is simply the name of the variable surrounded by curly braces. For example if you set the value of the variable to 5 and you enter the following expression:

```
Value = {MyVariable}
```

then after calculation the result appearing in the report will be:

```
Value = 5
```

### Calculating with Variables

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Variables can also be used in calculations. For example if the value of **MyVariable** is 15 and you enter the following expression:

```
Value = {MyVariable + 10}
```

then after calculation the result appearing in the report will be:

```
Value = 25
```

**Important:** If the report language is **C#** then variable names are case sensitive. If the report language is **VB.Net** then variable names are not case sensitive.

## 2.1.5. Using Report Code Variables

It is possible to add programming code and additional variables into the underlying code of a report within the report generator. If you choose to add variables in this way they can be used within expressions in the report.

The example below adds two variables to the report in code:

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```
using System;
using System.Drawing;
using System.Windows.Forms;
using System.Data;
using Stimulsoft.Report;
using Stimulsoft.Report.Components;
using Stimulsoft.Base.Drawing;

namespace StiReports
{

    public class Report : Stimulsoft.Report.StiReport
    {

        private int MyVariable = 15;
        private string MyName = "Test";

        public Report()
        {
            this.InitializeComponent();
        }

        #region StiReport Designer generated code - do not modify
        public Stimulsoft.Report.Dictionary.StiDataRelation ParentSu
        public Stimulsoft.Report.Dictionary.StiDataRelation ParentCs
```

You can use these variables in exactly the same way that you would use variables from the report data dictionary. However, it is important to remember that only variables declared in the data dictionary can be used to calculate global values such as a running total.

**Important!** Only variables declared in the data dictionary can be used to calculate global values.

## 2.1.6. Using Data Fields

Values from data sources can be used in expressions. To reference a field from the data source you must provide a string representation of the field. The syntax of the reference is simple - you give the name of the data source and the field name separated by a decimal point or full stop character, surrounded by curly braces:

```
{DataSource.Column}
```

For example, if you have an entry in the customers table with the company name field set to "The Big Company" and you enter the following expression:

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```
Company Name: {Customers.CompanyName}
```

then after calculation the result appearing in the report will be:

```
Company Name: The Big Company
```

**Note:** In order to avoid having to create this sort of expression manually you can use drag and drop from the data dictionary directly to the page of a report or within the expression editor to insert the necessary information automatically and with the correct syntax.

## Parent Relationships

If the data source has a **parent** relationship with other data sources you can directly reference fields from the **parent** data source. The syntax of the reference is similar to the examples already given - you give the name of the data source, then the relation name, and then the field name each separated by a decimal point or full stop character, and the whole thing surrounded by curly braces. For example:

```
{Datasource.Relation.Field}
```

Assuming that you have a set of information like this:

- **Products** is a name of a data source;
- **ParentCategories** is a name of relation, with what two data sources are related. In this case, two data sources are related:
- **Products** is a list of products, and **Categories** is a list of categories of these products.
- **CategoryName** is a column name in the **Categories** data source.

if you enter the following expression:

```
{Products.ParentCategories.CategoryName}
```

then after calculation the result appearing in the report will be the name of a category for a product.

There are no limits on the number of relationships you can use in Stimulsoft Reports. Therefore a column can be called through two or three or even more relationships. For example, Assuming that you have a set of information like this:

- **OrderDetails** is a name of a data source;
- **ParentProducts** is a name of relations between **OrdersDetails** and **Products** data sources;

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- **ParentCategories**. is a name of relation between **Products** and **Categories** data sources;
- **CategoryName** is a field in the **Categories** data source.

if you enter the following expression:

```
{OrderDetails.ParentProducts.ParentCategories.CategoryName}
```

then after calculation the result appearing in the report will still be the name of a category for a product butthe value of the **CategoryName** field has been obtained using relationships and bypassing the **OrderDetails** data source to get to the **Categories** data source. No direct call to the **Categories** data source has been used

**Important:** If the report language is **C#** then names are case sensitive. If the report language is **VB.Net** then names are not case sensitive.

It should be remembered that all the values in data sources are typed. This means that all data items are dynamically converted to the type that is specified in the options column which helps to accelerate the development of reports. However, if you need to get data from a column without conversion you will need to specify the data source directly. For example, in C#:

```
{Products["ProductName"]}
```

This expression will return data from the **Products** data source "as is" without conversion. The example below shows the same expression for VB.Net:

```
{Products.Item("ProductName")}
```

## 2.1.7. Using Component Properties

When creating an expressions you can use the properties of any component contained within a report.

### Syntax

The syntax is the same whether the report language is **C#** or **VB.NET**. You simply enterthe name of the component and the property name separated by a decimal point or full stop character, surrounded by curly braces:

```
{Component.Property}
```

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**Important:** If the report language is **C#** then names are case sensitive. If the report language is **VB.NET** then names are not case sensitive.

For example, to display the name of a component called MyComponent you would enter the expression:

```
{MyComponent.Name}
```

If you wish to access a calculated value from within a component you should use the property that contains the result you require. For example, if the component has ahyperlink value which calculates a hyperlink from the other component properties you would access it by entering the expression:

```
{MyComponent.HyperlinkValue}
```

You can use component properties in calculations should this be necessary. For example, the following would display the area taken up by the component:

```
{MyComponent.Width*MyComponent.Height}
```

## 2.1.8. Using Functions in Expressions

### Built In Functions

Stimulsoft Reports has a large number of built in functions available for you to use. You can access these functions directly from the data dictionary and within the Expression Editor. Examples of built in functions and their usage would be:

```
{Trim(MyString)}
```

or

```
{Trim(MyDataSource, MyDataColumn)}
```

In each case the use of the **Trim** function removes leading and trailing spaces from the result shown in the report.

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### .NET Framework Methods

In addition to the built in functions you can use any available .Net Framework methods. For string expressions you could use any of the following examples:

```
{MyString.Trim()} // Removes leading and trailing spaces
```

```
{"Test".ToUpper()}// Converts the value to upper case "TEST"
```

```
{MyString.Length}// Returns the length of the string - if the value of MyString is "Test" then the method will return 4
```

For numerical expressions you could use any of the following examples:

```
{Math.Round(MyValue, 2)}// Rounds the value to two decimal places
```

```
{Math.Sqrt(MyValue)}// Returns the square root of MyValue
```

```
{MyValue.ToString() + " times"} // Converts the number to a string and adds the word "times" -
                                // if MyValue is 5 this returns "5 times"
```

There are no limits to the number of Framework methods you can access - if they are available within .Net for the type you are using in a report you can use them without restriction.

## 2.1.9. Conditional Expressions

Conditional Expressions are not allowed in Stimulsoft Reports by default. However, there are two ways force conditional behaviour should you find it necessary to do so:

### The IIF Function

Firstly you can use the built-in **IIF** function which you can insert from the data dictionary. The function uses the following syntax:

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```
{IIF(Condition, Value1, Value2}
```

This evaluates **Condition**, and if the **Condition** returns **true**, then the expression will return **Value1**. If it returns **false**, then it will return **Value2**. For example, if you enter the following expression:

```
Number of Stores: {Store.Count > 0 ? Store.Count : "None"}
```

then if the value of Store.Count is 10 after calculation the result appearing in the report will be:

```
Number of Stores: 10
```

If the value of Store.Count is 0 after calculation the result appearing in the report will be:

```
Number of Stores: None
```

### The C# Ternary Operator

If you are using **C#** as your report languageit is also possible to use the ternary operator. The syntax for the ternary operator is as follows:

```
{Condition ? Value1 : Value2}
```

In exactly the same way as the IIF function, if **Condition** evaluates to **true**, then the expression will return **Value1**. If**false**, then it will return**Value2**.

## 2.1.10. Using Aliases in Expressions

To make it easier to understand expressions in a report you can use aliases instead of explicitly specifying the variable or data source and column details. For example, if you have a variable in the data dictionary called "MyVariable" and you have set its alias to "my best variable" you can reference that variable directly by Name or by Alias.

To use the variable by name you would create an expression like this:

```
{MyVariable}
```

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To use the variable by alias you would create an expression like this:

```
{[my best variable]}
```

## Syntax - Variables

If you use spaces, punctuation, or characters within an alias that are not permitted under C# or VB. Net then you MUST enclose the string representation of the alias in square brackets []. If no such characters are used then the square brackets are optional.

For example, if the alias was**"MyBestVariable"**then the expressioncan be written without brackets:

```
{MyBestVariable}
```

Otherwise you MUST enclose the variable in square brackets. Examples of valid alias usage:

```
{Variable1}

{VariableAndValue}

{[Variable and Value]}

{[Variable and Value]}

{[Variable&Values]}

{[Variable-First]}
```

Just for extra clarification, examples of some **INVALID** alias usage

```
{Variable and Value}// spaces in the name cause this to fail

{Variable&Values}// reserved character causes this to fail
```

## Syntax - Data

The same rule is used and when creating the names of data sources and columns. But there is one exception. When referring to the data column, only a part with incorrect characters for identifier should be bracketed.For example:

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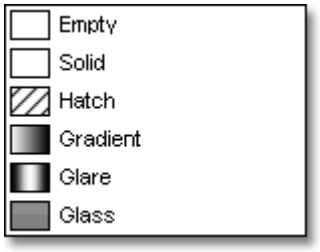
```
{DataSource.[Data Column]}

{[Data-Source].DataColumn}

{[Data=Source].[Data=Column]}
```

## 2.2. Appearance

Stimulsoft Reports offers many ways to control the appearance of your reports. These include text brushes, brushes to fill background, font types, component borders, and horizontal and vertical alignment of the contents of components. Styles can be used to simplify setting the appearance of your reports and to standardize the look and feel of them.

### 2.2.1. Background Brushes

Brushes are used to fill a background, and to draw a text within a report. Brushes have several styles and colors. To change the background color and appearance of a component use the **Brush** property within the Object Inspector.




Six types of Brushes are available within Stimulsoft Reports:

- **Empty**;
- **Solid**;
- **Hatch**;
- **Gradient**;
- **Glare**;
- **Glass**.

Below are representations of the results all six Brush types:

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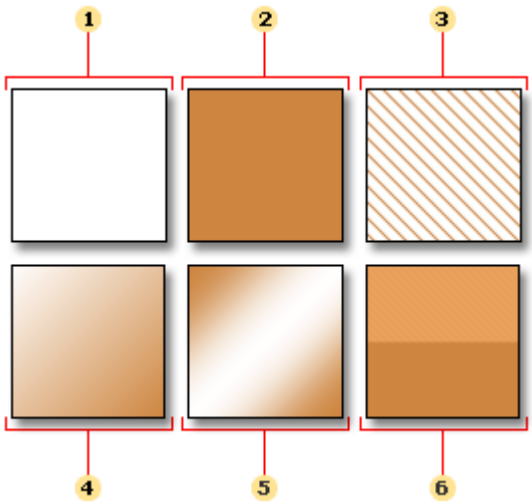


| | |
|---|---|
| 1 **Empty** | The background of a component is transparent. |
| 2 **Solid** | The background of a component is filled with the color you specify. |
| 3 **Hatch** | The background of a component is filled with a texture. The background and foreground colors of the selected texture can be specified individually.. |
| 4 **Gradient** | The background of a component is filled with gradient. A Start color, an End color, and a Gradient angle can be specified. |
| 5 **Glare** | The background of a component is filled using the Glare effect. |
| 6 **Glass** | The background of a component is filled using the Glass effect. |

## 2.2.2. Fonts and Font Brushes

A **font** is a complete set of characters - letters, numbers, and symbols - that share a common weight, width, and style. Stimulsoft Reports has two components which are used to setup and draw text, the **Text** and **Rich Text** components. The font for these components can be set using the **Font** property within the Object Inspector.

### Selecting Fonts

Text within a report can be output using different fonts. The font is set using the Font.Name property. Three examples fonts are shown below:

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Any font that is installed on your machine can be used in a report. However, when choosing a font try to select one that will also be present on a user machine or a report may not render as you would wish at runtime.

## Font Size

You may well wish to change the size of font on some components, for example a heading may require a much larger font size than a copyright notice.

The font size can be changed using the **Font.Size** property. For example:

## Font Styles

Different styles can be applied to the font. A font may include one or more styles such as regular, bold, semibold, italic, underlined, and strikeout. You can control the styles using properties such as **Font.Bold**, **Font.Italic**, **Font.Underline**, and **Font.Strikeout**, and the styles may be combined to produce different effects like bold and underlined or bold and italic. Examples of font styles are shown below:

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**Font Brushes**

Five types of brushes are used to draw a text: **Solid**, **Hatch**, **Gradient**, **Glare**, and **Glass**. The **TextBrush** property is used to control brushes. An example of using the five different brushes is shown below:

## 2.2.3. Borders

Many components in Stimulsoft Reports can have borders. Where they have been set borders may have different thicknesses, colors, and styles, and there be a drop shadow applied. The Border property of a component is used to control the appearance of the border, and this property can be manipulated either from the Object Inspector or using controls within the Ribbon or the Toolbar depending on whether you are using the Standard of Ribbon interface.

There are two types of borders in Stimulsoft Reports: Simple and Advanced. The Borders can be included in component styles so that they can be automatically applied to multiple components.

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Articles in this section describe both types of border and the differences between them.

### 2.2.3.1. Simple Borders

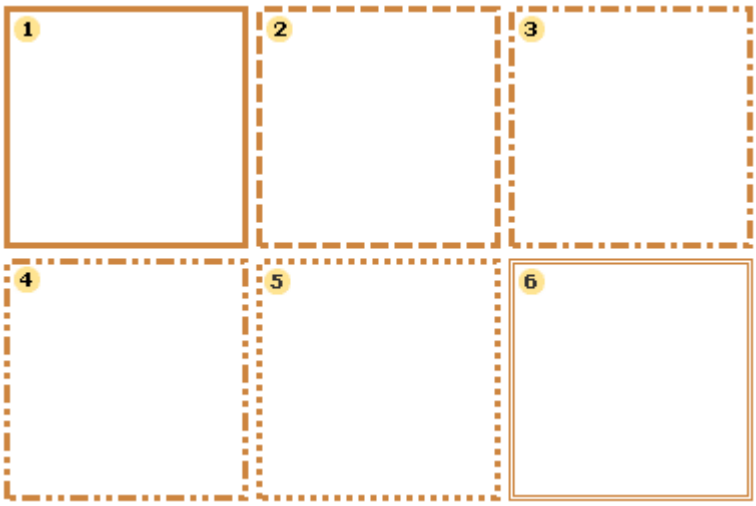
#### Border Sides

Each border consist of 4 segments: **top side**, **left side**, **bottom side**, **right side**. These segments may be shown together or in different combinations. For example:

Using the **Border.Side** property it is possible to setup on which sides a border will be visible.

#### Border Style

Seven styles of border are available - **Solid**, **Dash**, **Dash Dot**, **Dash Dot Dot**, **Dot**, **Double,** and **None**. With simple borders a selected style is applied to all sides of the border at the same time. Examples of each type of border are shown below:




1. **Solid**;
2. **Dash**;
3. **Dash Dot**;
4. **Dash Dot Dot**;
5. **Dot**;
6. **Double**.

The style of border can be selected using the **Border.Style** property. You can also set the border color and thickness.

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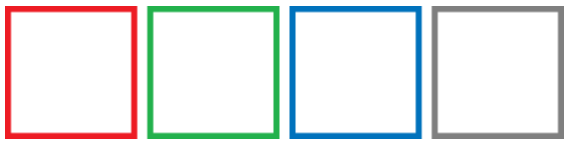
## Border Color

The border color can be set using the **Border.Color** property. When using simple borders the selected color is applied to all visible border sides. The image below demonstrates components with different border colors.



## Border Thickness

When using simple borders the border thickness is applied to all visible border sides. The border thickness can be set using the **Border.Size** property. The image below demonstrates components with different border thicknesses.

It is important to know that the border thickness is ignored if the **Double** border style is enabled.

**Notice.** The border size is ignored if the **Double** style is set in the **Border.Style** property.

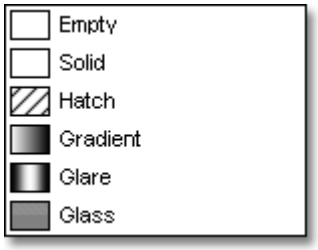
## Shadow

A component that has borders may have shadow. A shadow has three parameters:

- **Border.DropShadow** - a boolean property. If it is set to true, then a Shadow will be shown
- **Border.ShadowBrush** - the brush to use to draw a shadow;
- **Border.ShadowSize** - the size of a shadow.

## Shadow Styles

Five types of brushes are used to draw a border: Solid, Hatch, Gradient, Glare, and Glass.




These styles can be combined with the other shadow properties to apply a wide range of different appearances to report components. A few examples:

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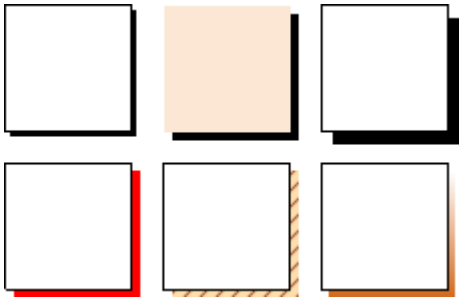
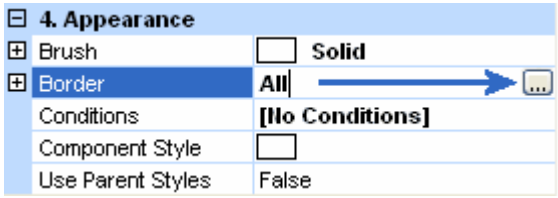


Setting Simple Border Properties

You can set simple Border properties directly from the Object Inspector, or using the Borders Toolbar.

Object Inspector

To set properties from the Object Inspector click the ellipsis button beside the Border property




A new dialog will be displayed that allows you to set the options for the border of the component:

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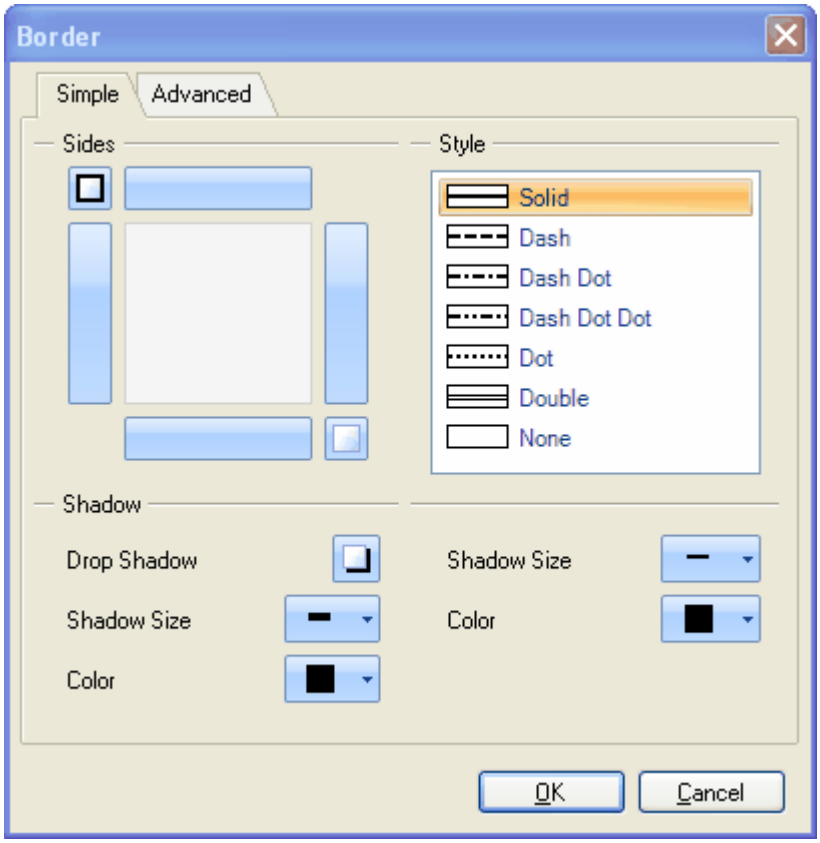


Simply select the settings you would like to apply and click the OK button to close the dialog and update the border.

### 2.2.3.2. Advanced Borders

The main difference between simple and advanced border types is that the style, color and thickness of the border can be set separately for each side - **Top Side**, **Left Side, Bottom Side**, **Right Side**. This provides additional opportunities to produce cleverly formatted reports.

**Note:** The advanced border type allows the style, color and thickness to be set separately for each side.

Some examples of advanced borders with different features applied to different sides:

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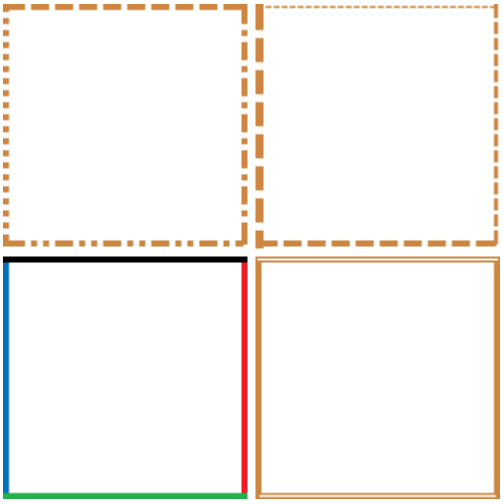


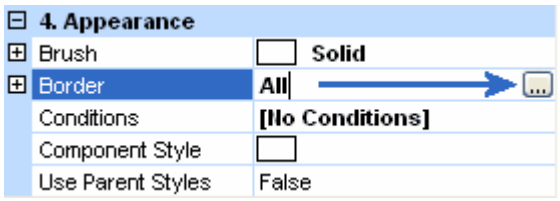
## Setting Advanced Border Properties

You can set Advanced Border properties only from the Object Inspector.

**Important:** You cannot set advanced border properties from the toolbar.

## Object Inspector

To set **Advanced** border properties from the Object Inspector click the ellipsis button beside the Border property




The simple **Border** dialog will be displayed. To access the advanced border features simply click the Advanced tab at the top to bring it to the front.

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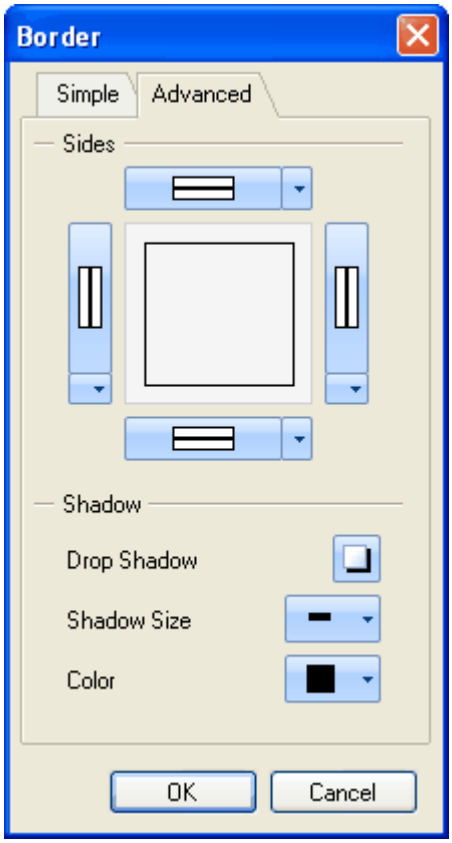


Simply select the settings you would like to apply and click the OK button to close the dialog and update the border.

#### 2.2.3.3. Conditional Borders

It is possible to conditionally select a border based on any condition arising within a report. For example, you may choose to display a red border if a total is negative, and a black border or no border at all if it is positive.

You can set a condition for a border using the Object Inspector in the designer. For more information on this topic please see the Conditional Formatting section.

### 2.2.4. Horizontal Alignment

Some components (such as Text and Image components) allow the horizontal alignment of their content to be specified when creating reports.

To set the horizontal alignment use the Horizontal Alignment property in the Object Inspector or the

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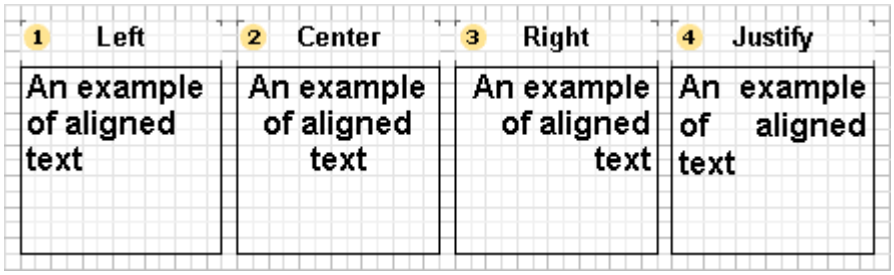
alignment controls within the Ribbon or the Toolbar depending on whether you are using the Standard of Ribbon interface.

### 2.2.4.1. Horizontal Text Alignment

The most common alignment for text is Left aligned, where the left hand edge of each line of text starts at the same position in relation to the left hand edge of the component. However, modern design needs more flexibility so Stimulsoft Reports allows a choice of alignments: **Left**, **Center**, **Right**, and **Justify**. These are assigned using the HorizontalAlignment property of the component.




| | | |
|---|---|---|
| 1 | **Left** | The text is aligned on the right edge with a ragged right edge. |
| 2 | **Center** | The text is aligned centrally within the component with ragged left and right edges. |
| 3 | **Right** | The text is aligned on the right edge with a ragged left edge. |
| 3 | **Justify** | The text is aligned evenly across the width of the component, providing smooth edges to the text on both sides. This is achieved by automatically adjusting the amount of space between words. |

#### Alternative Text Alignment

In addition the the alignment property it is possible to set text alignment using HTML tags.

### 2.2.4.2. Horizontal Image Alignment

Stimulsoft Reports allows a choice of three alignments of an image within an image component: **Left** ,**Center**, and **Right**.

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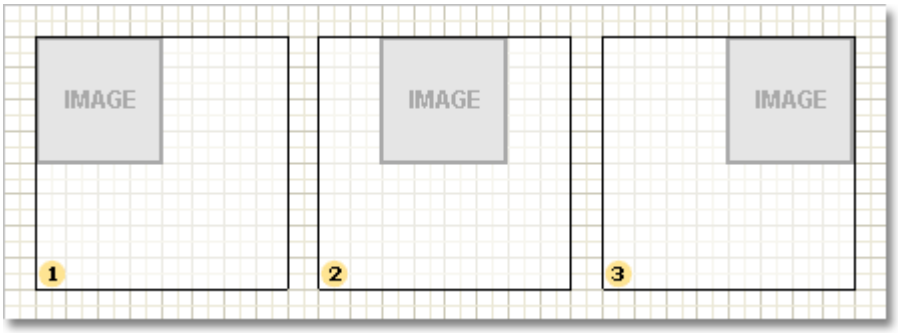


| | | |
|---|---|---|
| 1 | **Left** | The image is aligned on the right edge. |
| 2 | **Center** | The image is aligned on the center on the left and right edges of the component. |
| 3 | **Right** | The image is aligned on the right edge. |

Images will be aligned only when the Stretch property of the image component is set to **false**. If the Stretch property is true then alignment settings will be ignored.

**Important:** Image alignment will be ignored if the Stretch property is set to **true**.

## 2.2.5. Vertical Alignment

Some components (such as Text components) allow the vertical alignment of their content to be specified when creating reports.

To set the vertical alignment use the Vertical Alignment property in the Object Inspector or the alignment controls within the Ribbon or the Toolbar depending on whether you are using the Standard of Ribbon interface.

### 2.2.5.1. Vertical Text Alignment

By default a text is aligned with the top edge of a component. But if the need arises, you can install the necessary alignment. In doing so, if there is alignment on the lower side and the text does not fit vertically within the boundaries of the component, it will be truncated on the upper side. If it is aligned to the center, in the case if the text does not fit, he will cut off both the top and bottom side.

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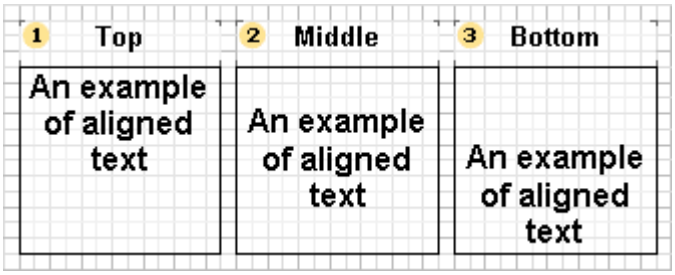
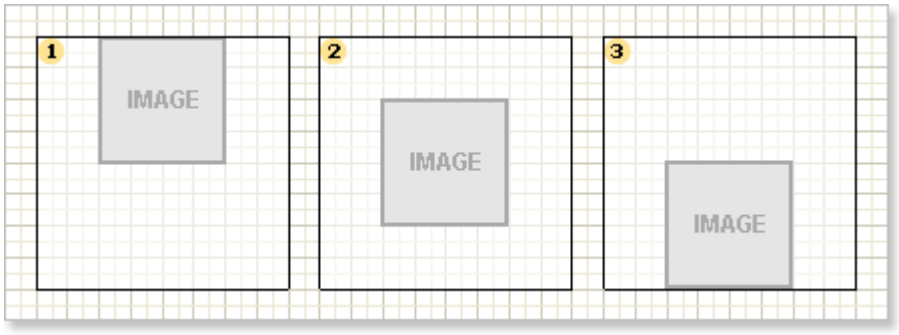



| | | |
|---|---|---|
| 1 | **Top** | Text is aligned with the top edge of the component. |
| 2 | **Center** | Text is aligned centrally between the top and bottom edges of the component. |
| 3 | **Bottom** | Text is aligned with by the bottom edge of the component. |

### 2.2.5.2. Vertical Image Alignment

To control the vertical alignment for the Image component the same property is used as for the Text component. Images are aligned only if the Stretch property is set to false. Otherwise, alignment will be ignored.




| | | |
|---|---|---|
| 1 | **Top** | The image is aligned with the top edge of the component. |
| 2 | **Center** | The image is aligned centrally between the top and bottom edges of the component. |
| 3 | **Bottom** | The image is aligned with the bottom edge of the component. |

Images will be aligned only when the Stretch property of the image component is set to **false**. If the **Stretch** property is true then alignment settings will be ignored.

**Important:** Image alignment will be ignored if the Stretch property is set to **true**.

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## 2.2.6. Styles

A style is a combination of various design attributes which can be applied to report components.

Instead of manually formatting each component, you can create a new style in a report and set its parameters (such as font name, size, and font style) exactly as you want them. The stylecan then be assigned to any component within the report and it will automatically take on the features of that style.

Another advantage of using styles is that should it become necessary or desirable to change the formatting of a report simply changing the settings of the relevant style will automatically propagate those changes across the entire report.In addition, a specific report style can be saved to a file and can then be used in other reports. This allows a common appearance to be applied to all reports where a corporate style or standard output format is required.

### Name

Each style has its own name. This name must be unique within a report.

### Description

Each style also has adescription which can be used toexplain the intended purpose of the style to others. For example if you create a style called 'Section Heading' you might assign a description 'Bold heading for use at the start of a section'

### Style Types

There are three types of style:

1. **Component**;
2. **Cross-Tab**;
3. **Chart**.

The Component style is designed to be used with all components except the Cross-Tab and Chart components which have their own dedicated style types because they have style features not included in other components.

The component style contains all the basic elements of the appearance of a component including **Font**,**Text Brush**,**Brush**,**Border**,**Horizontal Alignment**, and **Vertical Alignment**. In addition to these parameters, the simple style has parameter flags that determine whether certain style parameters can be modified by the user at design time.

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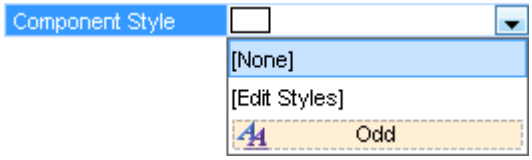
| | |
|---|---|
| **1. Main** | |
| Name | **Odd** |
| Description | |
| **2. Appearance** | |
| Text Brush | **Solid** |
| Brush | **Solid** |
| Border | **None** |
| Font | **Arial; 8pt** |
| Horizontal Alignment | Left |
| Vertical Alignment | Top |
| **3. Parameters** | |
| Allow Use Font | True |
| Allow Use Border | True |
| Allow Use Brush | True |
| Allow Use Text Brush | True |
| Allow Use Text Options | True |
| Allow Use Hor Alignment | False |
| Allow Use Vert Alignment | False |

## Applying Styles

Each component in the report has a **Component Style** property. In the object inspector you can specify any style that exists within the report by clicking the drop down button at the right of the property and selecting it from the list. You can also create or edit styles by clicking the [Edit Styles] option:




After a style has been assigned to a component the report generator will ensure that the appearance of the component consistently matches that of the specified style. Changes to the style will automatically cascade to all components to which the style has been assigned.

For example, if the developer changes the background color of the style all the components in the report that use that style will take on the new background color.

It is important to remember that even though they may share a style each component has its own design parameters which may not include some of those set in the style. For example, the **Panel** component has no **Font** parameter. If you apply a style to a panel, this parameter will be ignored. In other words the component will use only the design parameters of the style that it actively supports.

**Note:** The component will use only those parameters of the style that it supports.

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### 2.2.7. Alternate Row Styles

The **Data** component has more than one property to which it is possible to assign a style. In addition to the standard **ComponentStyle** property this component has two additional properties: **OddStyle** and **EvenStyle**. These properties are used to highlight alternate lines of a report.

By default these properties are not set, but if you allocate suitable styles to each property the report generator will apply those styles to the even and odd numbered lines when rendering the report. In the example below a style with a different background color has been applied to alternate rows:

### 2.2.8. UseParentStyles Property

Each component has an additional property management style: the **UseParentStyles** property.

If this property is set to **true**, then the component will use the style of the component on which it is located. For example, if the component is on a page, it will automatically use the style set for that page. If the component is on a panel, then it will use the panel style. If the **UseParentStyles** property is set to true for the panel, then both components will use the page style.

## 2.3. Conditional Formatting

Conditional formatting allows you to change the design of components, depending on certain conditions. For each component in the record, you can set the conditions that define its formatting, such as font style, text color and background color. You can also hide or disable the component. For a component, you can set several conditions, ie appearance of the component may change in different ways depending on the conditions. Setting up conditional formatting is done using the properties of conditions (Conditions). Using this property is called the editor environment. The figure below presents the main elements of the editor of conditions:

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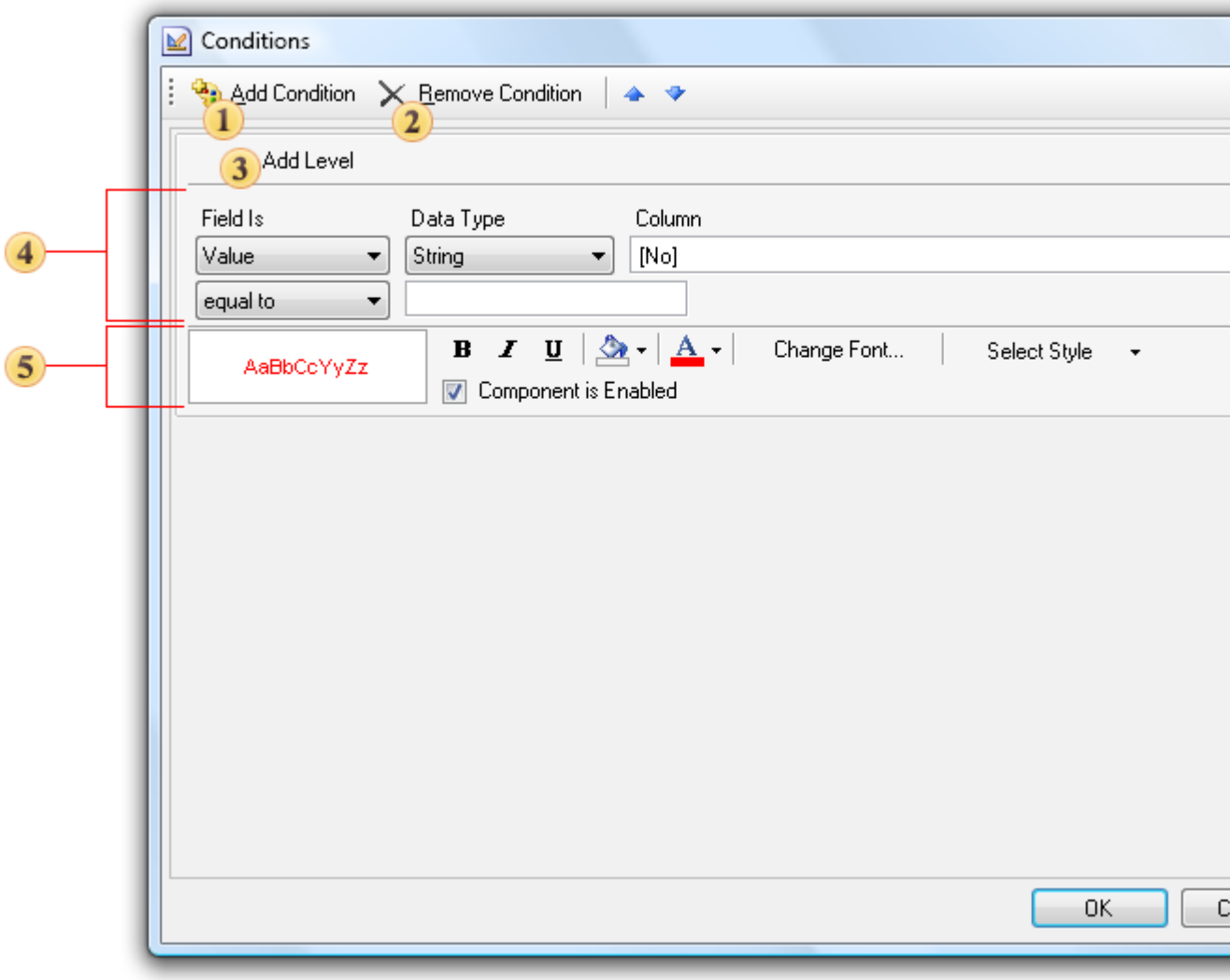


**1 Add condition**
This button adds a new conditional formatting to component conditions.
**2 Remove condition**
This button removes a new conditional formatting from component conditions. It is necessary to select the conditional formatting.
**3 Add level**
This button adds one level of the condition parameter.
**4 Parameters of condition**
Parameters of condition are specified on this panel.
**5 Parameters of formatting**
Parameters of the component appearance are setup on this panel.

There are two types of conditions - **Value** and **Expression**. How to set a condition is reviewed on next topics.

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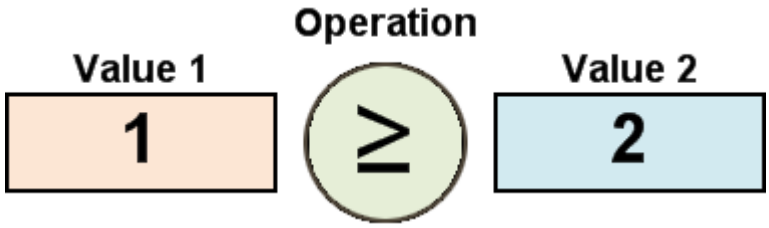
## 2.3.1. Value Condition

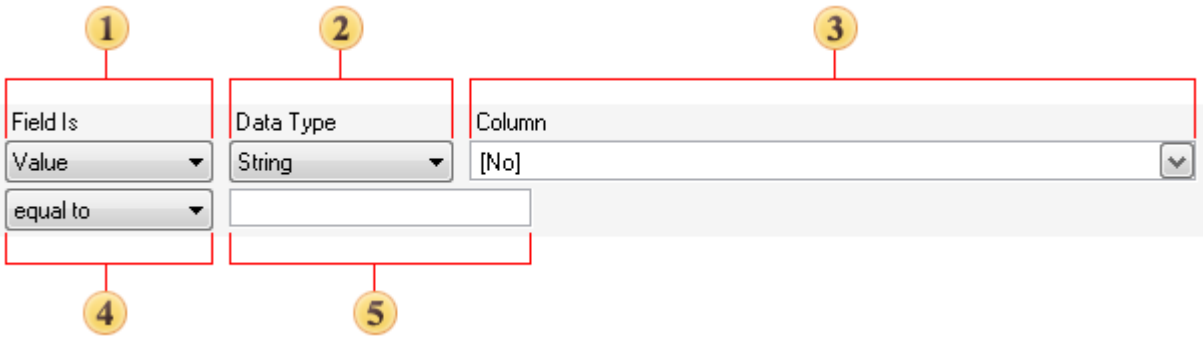
If you use a Value condition you will need to set the condition using a special format which consists of three elements:

| | | |
|---|---|---|
| 1. | **The column in the data source** | The column in the data source from which the first value is taken for comparison with the second value of the condition. |
| 2. | **Operator** | The selected operator lets the report generator know how to process the first and second values to obtain the result. For example, the comparison operator tells to the reporting tool to compare the first and the second values to produce the result. |
| 3. | **The value to calculate a condition** | This is the second value used to calculate the condition (the first is taken from the data source). The value can be either a constant (for all types of data except for the Expression type), or an expression (for the Expression type). |

If you were writing a value condition in code, it would look like this:




For several types of operation three values are used in calculating the condition. These are operations in which the value is checked to determine whether or not it is within a specified range, defined by two values. In addition to the elements described, the condition also includes a data type. The data type helps the reporting tool to identify the type of the second condition, and to automatically modify the list of available types of conditional operator. The picture below shows the panel used to set a value condition:

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| | | |
|---|---|---|
| 1 | **Field Is combo** | This is used to select the type of condition. |
| 2 | **Data Type combo** | This field specifies the type of data with which a condition will work. There are five types of data: String, Numeric, DateTime, Boolean, and Expression. The data type affects how the reporting tool processes the condition. For example, if the data type is a string, then the methods that work with strings are used. In addition, depending on the type of data the list of available operators is automatically changed. For example, the Contains operator is available only for the String data type. The Expression data type provides the ability to specify an expression instead of the second value. In this case the reporting tool will not check the compatibility of the first and the second values of the condition. Therefore, the user should ensure that the expression entered is valid in order to prevent runtime errors. |
| 3 | **Column combo** | This is used to specify the column of the data source. The value of the column will be used as the first value of the condition. |
| 4 | **Operator combo** | This is used to specify the type of operator to be used when calculating the value of the condition. |
| 5 | **Value box** | This is used to specify the comparison value to be used when calculating the value of a condition. For some operations you may need to specify three values. |

## 2.3.2. Operators

Operators enable you to define the circumstances in which a condition is deemed to be true. The operators available depend on the data type being operated upon, so only the appropriate operators will be available. For example, a logical condition can only be true or false, so it cannot be greater than anything making the greater than operator inappropriate for that data type.

The table below shows a list of operators and the data with which they can be used:

| Operator | Types of data | | | | | Description |
|---|---|---|---|---|---|---|
| | String | Numerical | Date | Logic | Expression | |
| equal to | ✓ | ✓ | ✓ | ✓ | ✓ | If the first value is equal to the second, then the condition is true. |
| not equal to | ✓ | ✓ | ✓ | ✓ | ✓ | If the first value is not equal to the second, then the condition is true. |

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| | | | | | | |
|---|---|---|---|---|---|---|
| between | | ✓ | ✓ | | ✓ | If the first value is in the range, then the condition is true. |
| not between | | ✓ | ✓ | | ✓ | If the first value is not in the range, then the condition is true. |
| greater than | | ✓ | ✓ | | ✓ | If the first value is greater then the second value, then the condition is true. |
| greater than or equal to | | ✓ | ✓ | | ✓ | If the first value is greater then the second value of equal to the second value, then the condition is true. |
| less than | | ✓ | ✓ | | ✓ | If the first value is less then the second value, then the condition is true. |
| less then or equal to | | ✓ | ✓ | | ✓ | If the first value is less then the second value or equal to the second value, then the condition is true. |
| containing | ✓ | | | | | If the first value contains the second value, then the condition is true. This operator is used only for strings. |
| not containing | ✓ | | | | | If the first value does not contain the second value, then the condition is true. This operator is used only for strings. |
| beginning with | ✓ | | | | | If the first value starts with the second value, then the condition is true. This operatior is used only for strings. |

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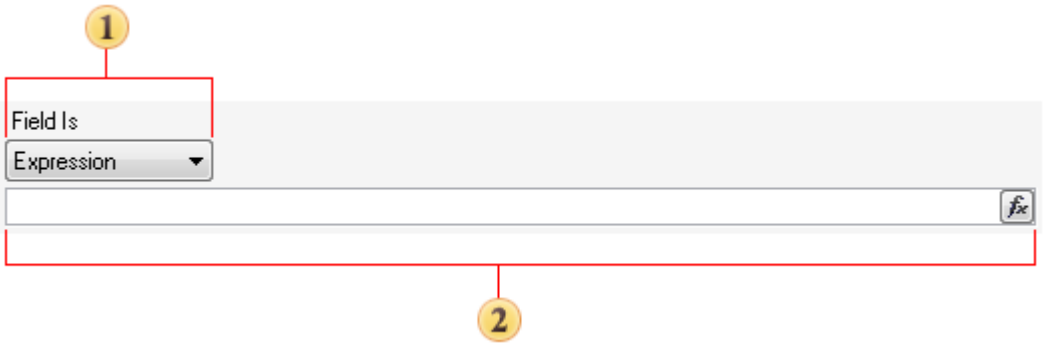
| | | | | | | |
|---|---|---|---|---|---|---|
| ending with | ✓ | | | | | If the first value ends with the second value, then the condition is true. This operator is used only for strings. |

## 2.3.3. Expression Condition

When you choose to use an Expression condition you define a text expression that returns a boolean value. The value returned determines whether or not the formatting is applied. The configuration panel is shown below:




| | | |
|---|---|---|
| 1 | **Field Is** | Field is used to select the type of conditions. |
| 2 | **Expression** | This field is used to define an expression that should return a boolean value. |

For example, a suitable expression in C #:

```
Customers.CustomerName == "MyCustomer"
```

If the expression cannot return a boolean value then the report generator will not be able to render the conditional formatting.

**Important:** The expression MUST return a boolean value or the conditional formatting will fail.

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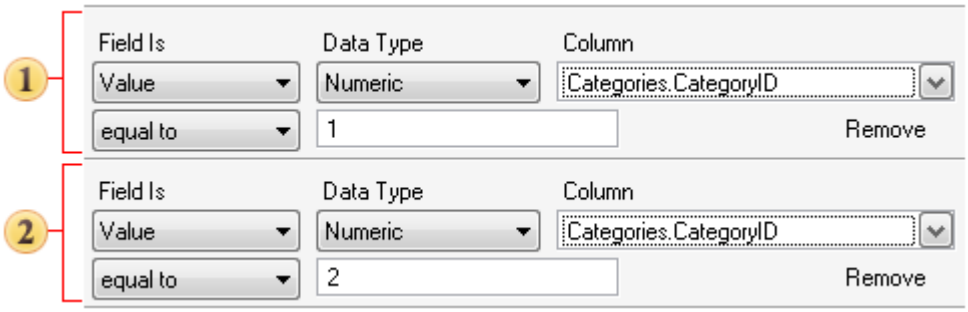
## 2.3.4. Multi Part Conditions

In some cases, one comparison operation may not be sufficient to define the condition. To allow for this situation Stimulsoft Reports allows you to specify a multi part condition. The picture below shows the condition editor a two level multi part condition:




| | |
|---|---|
| 1 | **The first part of the condition** |
| 2 | **The second part of the condition** |

If you were to write this condition in code as a logical expression, it would look like this:

```
(Categories.CategoryID) = 1 or (Categories.CategoryID = 2)
```

It is possible to select the type of logical addition of the various parts of a multi part condition: the **logical AND** or the **Boolean OR**. To define this simply select the appropriate radio button

## 2.3.5. Defining Formatting

If the condition returns true when evaluated by the report engine the formatting of the component will be changed according to the design settings. Setting is carried out using the formatting panel. The picture below shows the components of the control panel:

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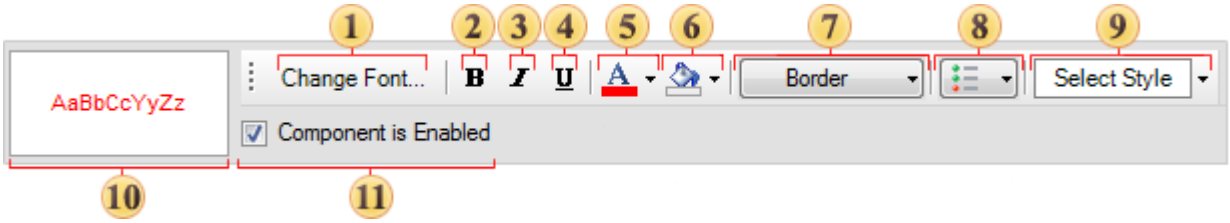


| | | |
|---|---|---|
| 1 | **Font** | Used to select the font. |
| 2 | **Bold button** | Used to define the bold font style. |
| 3 | **Italic button** | Used to define the italic font style. |
| 4 | **Underlined button** | Used to define the underlined font style. |
| 5 | **Font Color Selector** | Used to define the text color. |
| 6 | **Background Color Selector** | Used to define the background color. |
| 7 | **Border** | Used to set borders. |
| 8 | **Control Menu** | Enables/Disables the components of the control panel. |
| 9 | **Style button** | This button is used to select a style to be applied. |
| 10 | **Pattern** | This shows a preview of how the control will look with the conditional formatting applied. |
| 11 | **Component is Enabled check box** | This control lets to control how the result of a condition would affect on the Enabled property of the component. |

You can enable or disable the accessibility of the component in a report. For example, you can remove a page from a rendered report by setting a condition.

If the condition evaluates to true, then the component appearance will change according to settings made in this panel. If the component does not support the specified appearance (for example, because it has no Font property), the appearance will be automatically deleted.

In addition, you can control the availability of the control within the report using the Component is Enabled check box.

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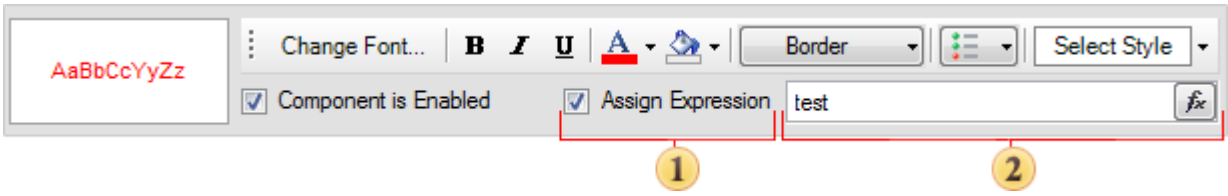
## 2.3.6. Conditional Formatting and Text Components

The conditions editor of text components has differences from other components. It has additional ability to assign text expression, if the condition is true. On the picture below the panel to edit conditions of the text component is shown.




| | | |
|---|---|---|
| 1 | **Assign expression** | This flag controls whether or not a text expression is used in the condition. If it is disabled then the expression is not used. |
| 2 | **Text expression** | The text expression that will be assigned to a text component if the condition is true. |

## 2.3.7. Conditional Formatting and Cross-tables

The Cross Table condition editor has several differences from the standard condition editor. In particular there are signification differences when writing expressions within conditions, as it adds some special variables such as: **value, tag, tooltip,** and **hyperlink**.

The **value** variable contains the value of the cross table cell and can be used to calculate a condition:

```
tag > 50
```

In other words, if the value of the cell of a cross table is greater than 50, then the condition is true and formatting that was set in the condition will be applied to the cell.

The **tag**, **tooltip**, and **hyperlink** variables contain the calculated values of the **Tag**, **Tooltip,** and **Hyperlink** properties. For example, you may specify the name of a product in the **Tag** property of the cross table cell:

```
{Products.ProductName}
```

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Suppose we wanted to highlight in red the cell of the cross table in which the Coffee product is described. This can be achieved by setting the formatting and using the following condition:

```
tag == "Coffee"
```

## 2.4. Output Text Parameters

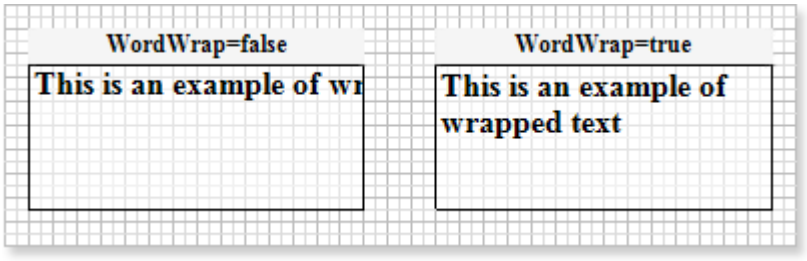
Stimulsoft Reports has a number of ways for handling, processing and output text. The following components to display the text are:

1. **Text** is the basic component to ouptut text in the report. The component supports a large number of different settings, processing and displaying text;
2. **RichText** is a component used to output of **RTF** text;
3. **Text in Cells** is a special component to output a text in a cell.

The **Text** component abilities will reviewed in next articles.

### 2.4.1. Multiline Text

If the text cannot be put on one line it will be trimmed by default. If it is required to put a text on some lines, then you should set the word wrap. You should set the **TextOptions.WordWrap** property of the **Text** component to t**rue**. When the text is wrapped on a new line, vertical and horizontal alignments are used.




### 2.4.2. Trimming in the End of Text Line

If there is not enough space to put whole text line in the text component, then, using the **TextOptions.Trimming** property, it is possible to customize text trimming. It has the following values:

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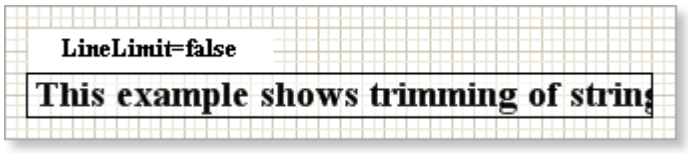
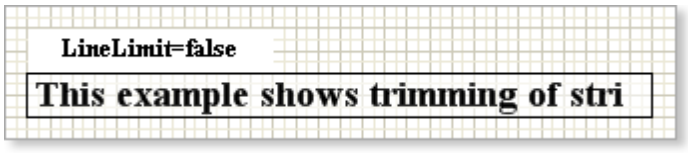
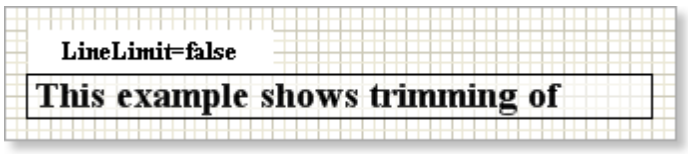
**None** - the text is trimmed strictly by the edge of a text component or, if it is a multiline text, by the last visible word;




**Character** - the line is trimmed after the last visible character;

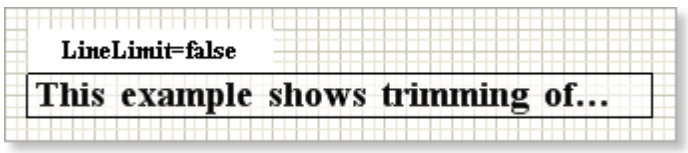



**Word** - the line is trimmed by the last visible word;




**Ellipsis Character** – last characters of a word are changed on omission points;

**Ellipsis Word** - omission points are added after the last visible word;




**Ellipsis Path** - the middle of a line is changed to dots so as the beginning and the end of a text line can be visible.

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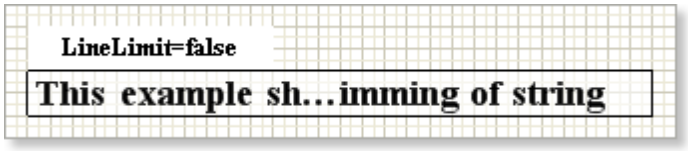
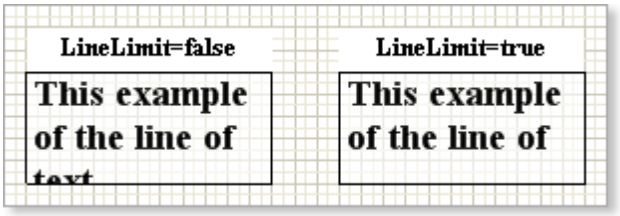


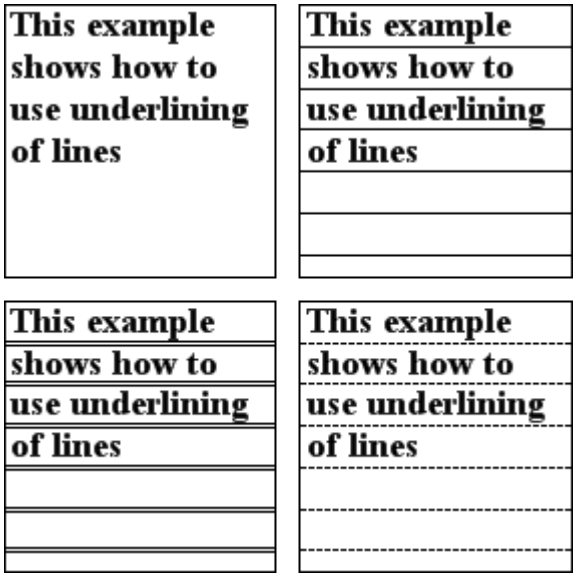

## 2.4.3. Prevent Showing Incompletely Visible Lines

Often it is necessary to output text and do not show vertically trimmed lines on the bottom of a component. If to set the **LineLimit** property to **true**, then only full lines will be output. Absence of additional line may change the word wrap.




## 2.4.4. Lines of Underlining

If it is necessary to underline the **Text** component with horizontal lines, then it is possible to use the **LinesOfUnderline** property of the text component. Using this property it is possible to select style of underlining. If to select the **None** style**,** then there will not be any underlining.

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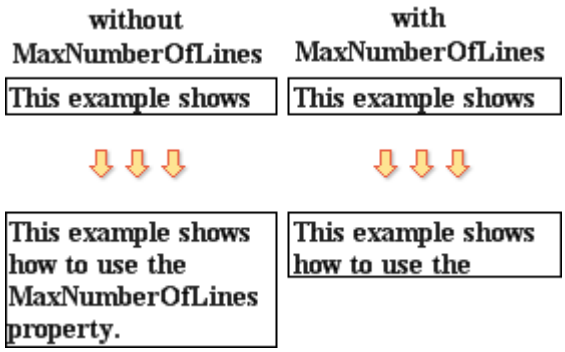
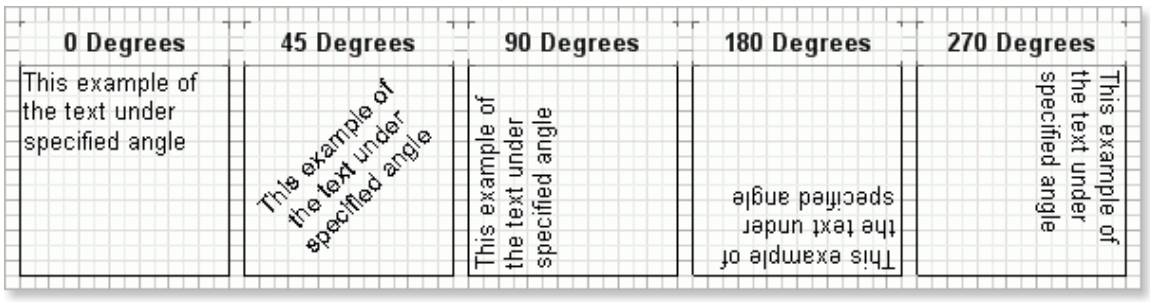
## 2.4.5. Maximal Number of Lines

How to make the **Text** component, when increasing the vertical size, increase it on the maximal number of horizontal lines? Use the **MaxNumberOfLines** property. By default, this property is equal in zero and the component will be increased vertically. The component increasing is limited in page size. If you set the value of this property in 5, then, when increasing the vertical size, it will be increased in 5 horizontal lines.




## 2.4.6. Text Rotation

Set the angle of the text rotation using the **Angle** property of the **Text** component. The angle of the text is given in degrees anticlockwise.




## 2.4.7. Processing Duplicates

In many reports there is a necessity to join a few **Text** components in one which contain duplicated values. The **ProcessingDuplicates** property is used for this. It should be set to **true**.

See the picture below how repeated text values are joined.

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In many reports, If these components contain duplicate values, then it is necessary to combine some **Text** components in one. To combine duplicate values it is necessary to use the **ProcessingDuplicates** property.

The picture below shows an example of duplicate text values.

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| | | | | |
|---|---|---|---|---|
| **Beverages** | Chai | 10 boxes x 20 bag | 18,00p. | 39,00 |
| | Chang | 24 - 12 oz bottles | 19,00p. | 17,00 |
| | Chartreuse verte | 750 cc per bottle | 18,00p. | 69,00 |
| | Côte de Blaye | 12 - 75 cl bottles | 263,50p. | 17,00 |
| | Guaraná Fantástica | 12 - 355 ml cans | 4,50p. | 20,00 |
| | Ipoh Coffee | 16 - 500 g tins | 46,00p. | 17,00 |
| | Lakkalikööri | 500 ml | 18,00p. | 57,00 |
| | Laughing Lumberjack Lager | 24 - 12 oz bottles | 14,00p. | 52,00 |
| | Outback Lager | 24 - 355 ml bottles | 15,00p. | 15,00 |
| | Rhönbräu Klosterbier | 24 - 0.5 l bottles | 7,75p. | 125,00 |
| | Sasquatch Ale | 24 - 12 oz bottles | 14,00p. | 111,00 |
| | Steeleye Stout | 24 - 12 oz bottles | 18,00p. | 20,00 |
| **Condiments** | Aniseed Syrup | 12 - 550 ml bottles | 10,00p. | 13,00 |
| | Chef Anton's Cajun Seasoning | 48 - 6 oz jars | 22,00p. | 53,00 |
| | Chef Anton's Gumbo Mix | 36 boxes | 21,35p. | 0,00 |
| | Genen Shouyu | 24 - 250 ml bottles | 15,50p. | 39,00 |
| | Grandma's Boysenberry Spread | 12 - 8 oz jars | 25,00p. | 120,00 |
| | Gula Malacca | 20 - 2 kg bags | 19,45p. | 27,00 |
| | Louisiana Fiery Hot Pepper Sauce | 32 - 8 oz bottles | 21,05p. | 76,00 |
| | Louisiana Hot Spiced Okra | 24 - 8 oz jars | 17,00p. | 4,00 |
| | Northwoods Cranberry Sauce | 12 - 12 oz jars | 40,00p. | 6,00 |
| | Original Frankfurter grüne Soße | 12 boxes | 13,00p. | 32,00 |
| | Sirop d'érable | 24 - 500 ml bottles | 28,50p. | 113,00 |
| | Vegie-spread | 15 - 625 g jars | 43,90p. | 24,00 |
| **Confections** | Chocolade | 10 pkgs. | 12,75p. | 15,00 |
| | Gumbär Gummibärchen | 100 - 250 g bags | 31,23p. | 15,00 |
| | Maxilaku | 24 - 50 g pkgs. | 20,00p. | 10,00 |
| | NuNuCa Nuß-Nougat-Creme | 20 - 450 g glasses | 14,00p. | 76,00 |
| | Pavlova | 32 - 500 g boxes | 17,45p. | 29,00 |
| | Schoggi Schokolade | 100 - 100 g pieces | 43,90p. | 49,00 |
| | Scottish Longbreads | 10 boxes x 8 piece | 12,50p. | 6,00 |
| | Sir Rodney's Marmalade | 30 gift boxes | 81,00p. | 40,00 |
| | Sir Rodney's Scones | 24 pkgs. x 4 piece | 10,00p. | 3,00 |
| | Tarte au sucre | 48 pies | 49,30p. | 17,00 |
| | Teatime Chocolate Biscuits | 10 boxes x 12 pie | 9,20p. | 25,00 |
| | Valkoinen suklaa | 12 - 100 g bars | 16,25p. | 65,00 |
| | Zaanse koeken | 10 - 4 oz boxes | 9,50p. | 36,00 |
| **Dairy Products** | Camembert Pierrot | 15 - 300 g rounds | 34,00p. | 19,00 |
| | Flotemysost | 10 - 500 g pkgs. | 21,50p. | 26,00 |
| | Geitost | 500 g | 2,50p. | 112,00 |
| | Gorgonzola Telino | 12 - 100 g pkgs | 12,50p. | 0,00 |
| | Gudbrandsdalsost | 10 kg pkg. | 36,00p. | 26,00 |
| | Mascarpone Fabioli | 24 - 200 g pkgs. | 32,00p. | 9,00 |
| | Mozzarella di Giovanni | 24 - 200 g pkgs. | 34,80p. | 14,00 |
| | Queso Cabrales | 1 kg pkg. | 21,00p. | 22,00 |
| | Queso Manchego La Pastora | 10 - 500 g pkgs. | 38,00p. | 86,00 |

The **ProcessingDuplicates** property makes it possible to combine duplicate values as follows:

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**Merge, Hide, RemoveText, GlobalMerge, GlobalHide, GlobalRemoveText**. Next, look at examples of this property.

**Merge -** In this mode, the text components with identical values are merged into a single text component.

| | |
|---|---|
| Assistant Sales Agent | Assistant Sales Agent |
| Assistant Sales Agent | |
| Assistant Sales Represent | Assistant Sales Represent |
| Marketing Assistant | |
| Marketing Assistant | |
| Marketing Assistant | Marketing Assistant |
| Marketing Assistant | |
| Marketing Assistant | |
| Marketing Assistant | |

**Hide -** In this mode, the first text component remains on its place without changing the size. The rest of the text components are removed from the report.

| | |
|---|---|
| Assistant Sales Agent | Assistant Sales Agent |
| Assistant Sales Agent | |
| Assistant Sales Represent | Assistant Sales Represent |
| Marketing Assistant | Marketing Assistant |
| Marketing Assistant | |
| Marketing Assistant | |
| Marketing Assistant | |
| Marketing Assistant | |
| Marketing Assistant | |

**Hide -** In this mode, the first text component remains in place without changing the size. The rest of the text components to remain in their seats, but they removed the text content.

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| | | |
|---|---|---|
| Assistant Sales Agent | | Assistant Sales Agent |
| Assistant Sales Agent | | |
| Assistant Sales Represent | | Assistant Sales Represent |
| Marketing Assistant | | Marketing Assistant |
| Marketing Assistant | | |
| Marketing Assistant | | |
| Marketing Assistant | | |
| Marketing Assistant | | |
| Marketing Assistant | | |

Combining the components with the same value is taken into account in the name of the components of a report template. If suddenly one of the other two will be exactly the same text component with the same text values, but they will have different names, then those components will not be merged. To avoid this limitation you need to use the **GlobalMerge, GlobalHide, GlobalRemoveText**. They worked the same way as described above regimes, but it does not take into account the names of the components.

## 2.4.8. Ignoring Null Values

Often, when the numerical information is printed then it is required to ignore the zero values. In other words it is necessary do not show print them at all. The **HideZeros** property is used for this. It is necessary to set this property to **true**, and the **Text** component will not print zero values. The picture below shows an example without using this property (**left picture**) and using the property ( **right picture**).

| HideZeros = false | |
|---|---|
| 9,00$ | 61,00 |
| 33,25$ | 22,00 |
| 39,00$ | 0,00 |
| 97,00$ | 29,00 |
| 24,00$ | 115,00 |
| 32,80$ | 0,00 |
| 123,79$ | 0,00 |

| HideZeros = true | |
|---|---|
| 9,00$ | 61,00 |
| 33,25$ | 22,00 |
| 39,00$ | |
| 97,00$ | 29,00 |
| 24,00$ | 115,00 |
| 32,80$ | |
| 123,79$ | |

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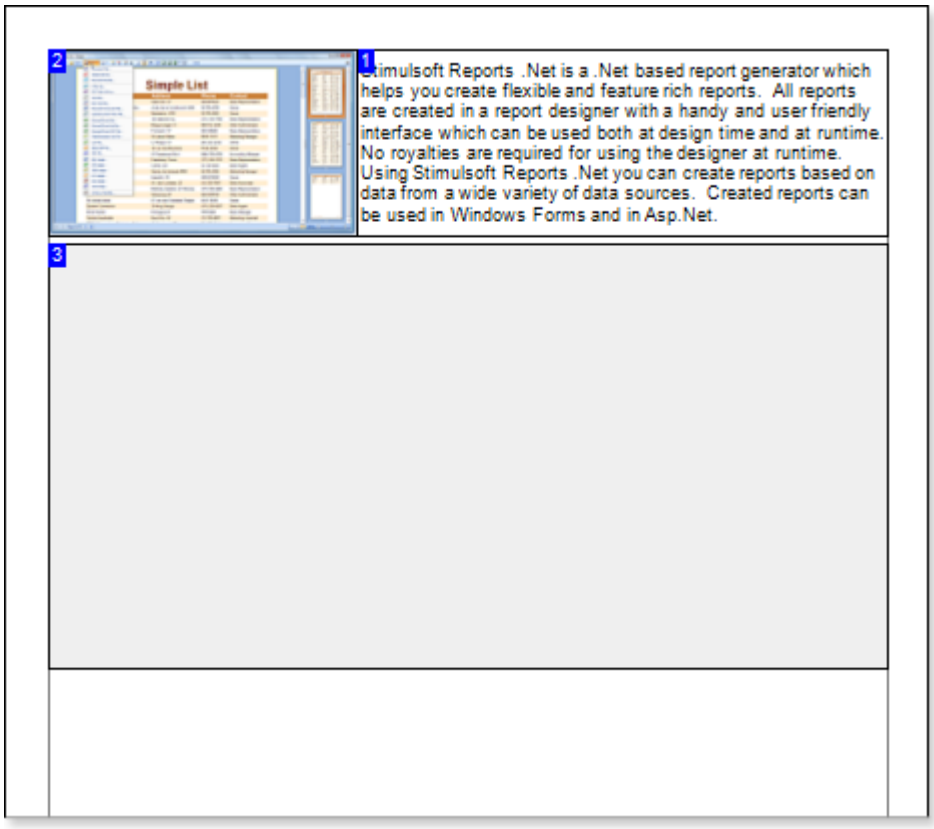
## 2.4.9. ReportTo Property

The **ReportTo** property of the **Text** component is used for synchronous output of a message in two text components. The message is specified in the first text component. Then, in this text component, in the **ReportTo** property, the second text component, on which message output will be continued, is specified. If the space in the first component is not enough for the message output, then this message will be continuing to output in the second component. You should consider, that in the first component, whole number of vertical visible lines will be output. In the second component the message will be continuing to output starting with the end of the message of the first component. You should know that for the correct work of this function you have to create the first component and then the second one. If there was another order of creation of components you may use commands of components order.




The result can be seen on the picture below.

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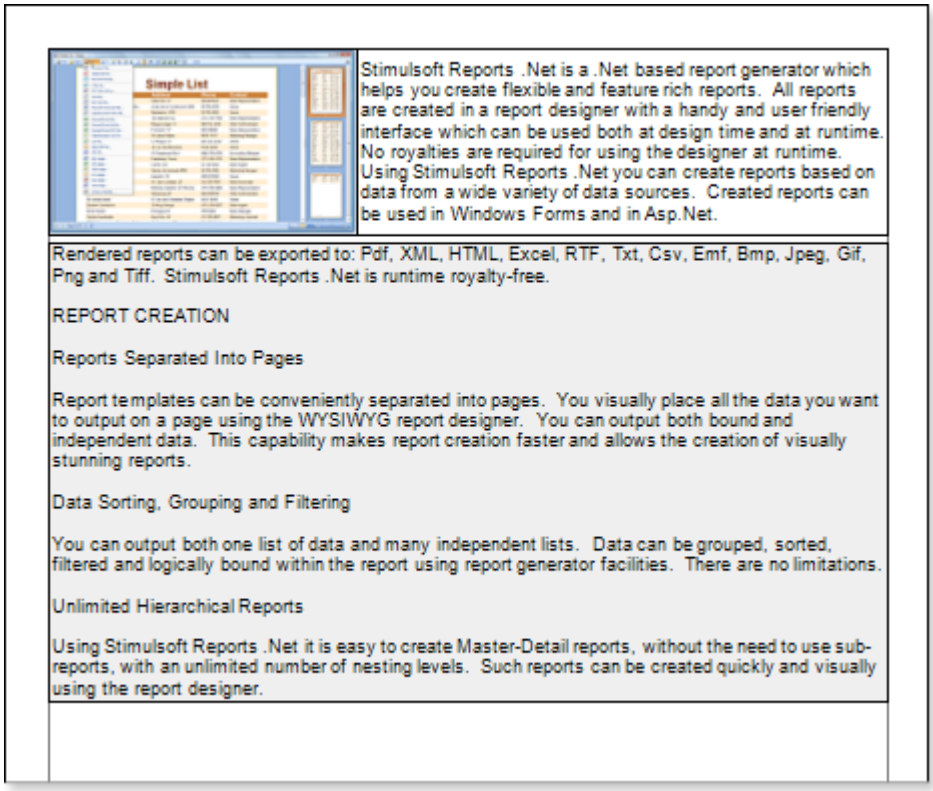


The **ReportTo** property makes it possible to work only with components that are located on one level - such as a bands.

## 2.4.10. Output Text Only without Taking Expressions into Consideration

How to get an expression to be output "as is", without code processing? Set the **TextOnly** property to **true**, and all the expressions will be output as a text. No calculations will be made.

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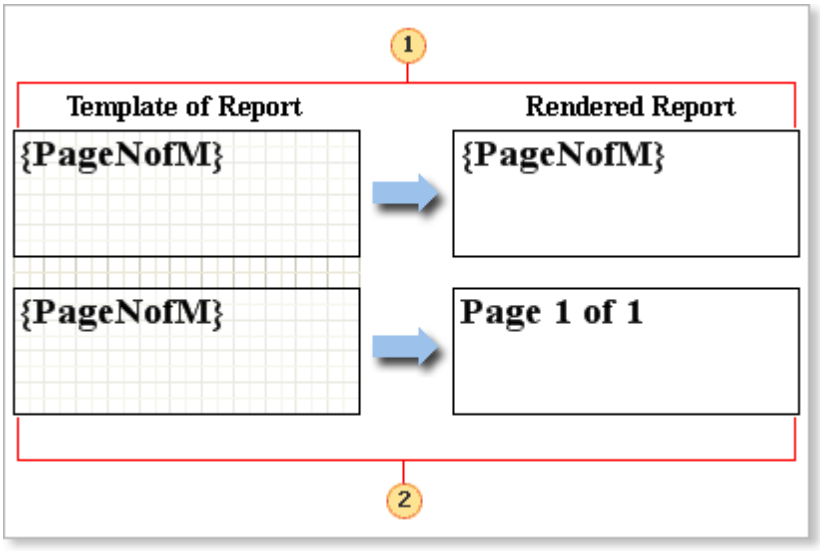


1 The **TextOnly** property is set to **true**. The text is output "as is", without processing of expressions.

2 The **TextOnly** property is set to **false**. The text is output with processing of expressions.

### 2.4.11. Expression Processing in the End of Report Rendering

By default, the report generator immediately processes all expressions which are met in the text. But sometimes it is necessary to process expressions after the report rendering. For example, while report rendering, the calculation of a variable is in process. The result of calculation will be known right after the report rendering, and the result of calculation is to be output on every page of a report. To do this, set the value of the **ProcessAtEnd** property of the **Text** component to **true**.

**Important!** When the content of the text component is processed in the end of the report rendering, the report generator cannot define the true size of the component when it is output. Therefore, auto change of the component size will work with failure.

## 2.5. Text Formatting

The Text format is a representation of information in the special form (grouping and data output, in order to the specified pattern). Stimulsoft Report contains all necessary instruments required for formatting of all information that will be output. The **Text Format** is the basic tool for formatting a text before output. This tool is a dialog box, which allows setting parameters of format. Text format dialog box is called from the context menu, that appears when right-clicked on the text components, which supports formatting.

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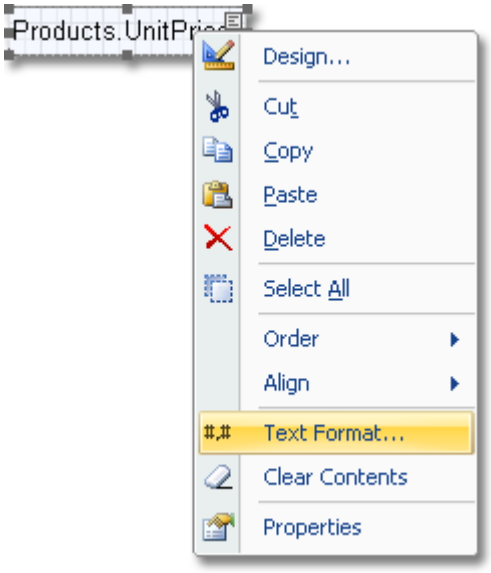
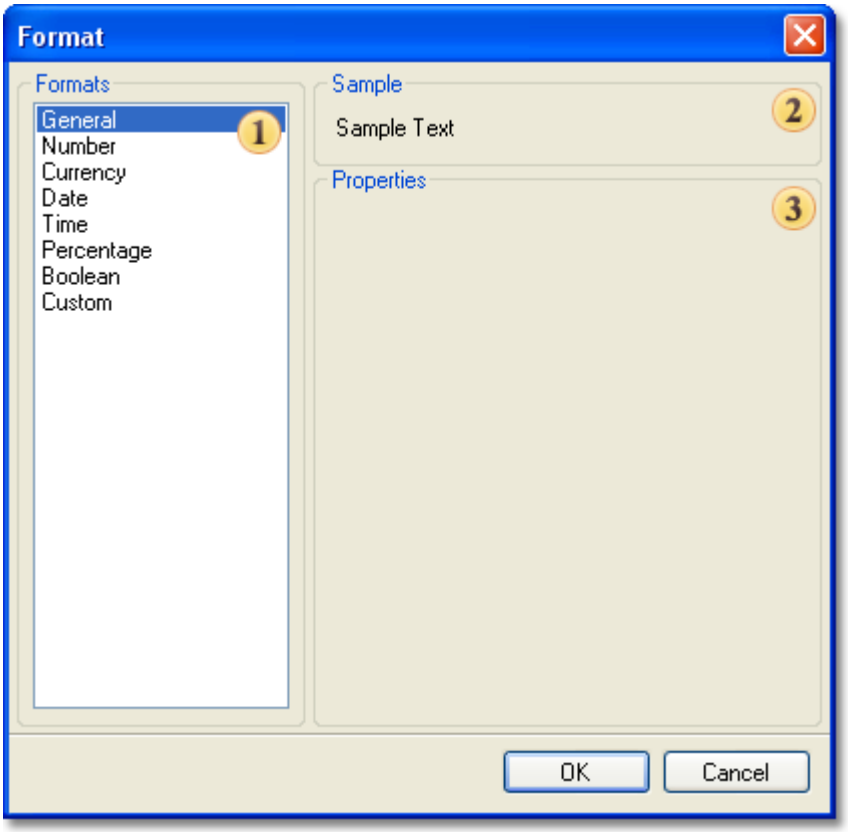



Also, using **TextFormat** properties, the dialog box can be called.

The Format window is divided into three parts:




1 A section where the formatting type can be chosen.

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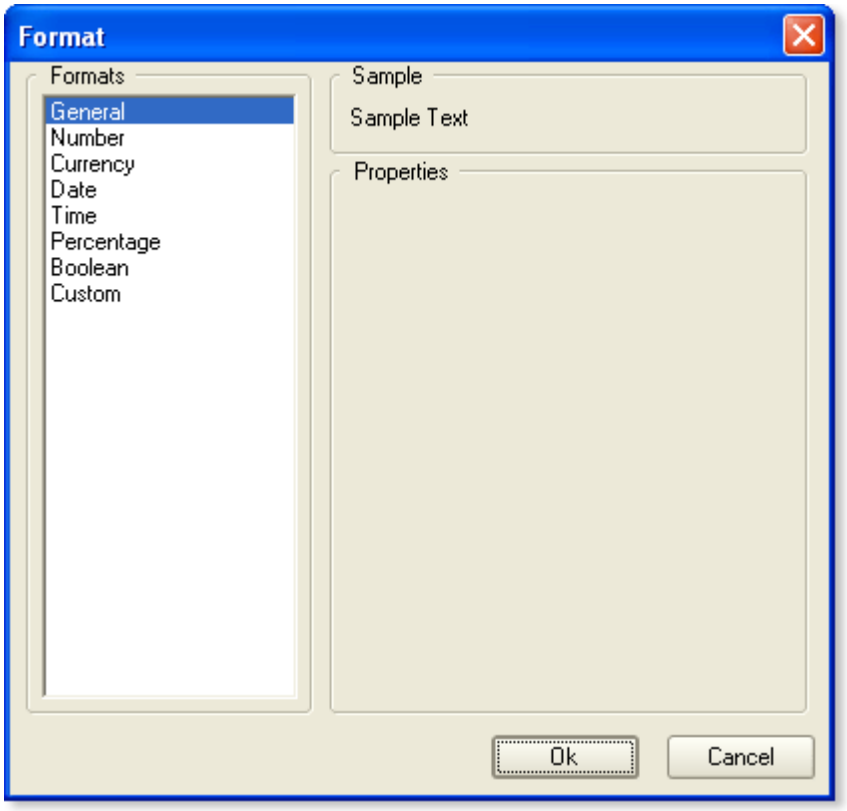
There are some types of showing a text:
**Standard** - output data without specific number format;
**Number** — this format is used for general display of numbers;
**Currency** — this format is used for general monetary values;
**Date** — this format is used to display date values;
**Time** — this format is used to display time values;
**Percent** — this format is used to display a result in percent symbol;
**Boolean** — this format is used to display boolean values;
**Custom** — custom data formatting.

2. Shows how the formatted text will look like;
3. Shows the format settings.

## 2.5.1. Standard Formatting

The **Standard** format is used to show text and numerical values of any type. No formatting is done in this case.

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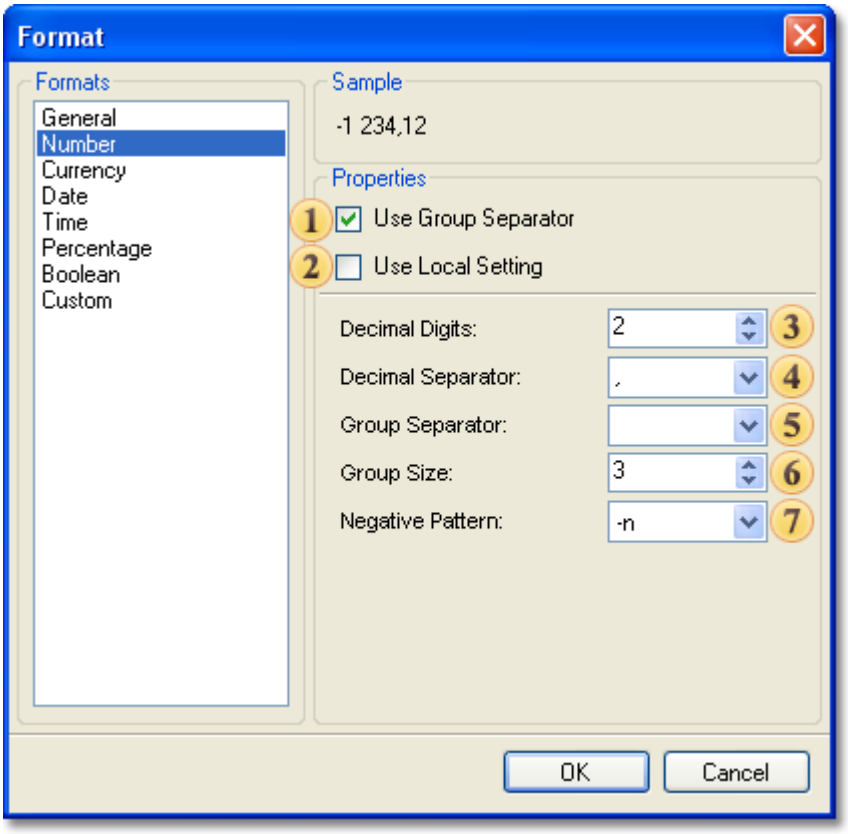
## 2.5.2. Numerical Formatting

It is recommended to use the numerical format to show numerical values.




**1 Group separator**
When the Group Separator is used then number will be separated into number positions.
**2 Local setting**
When using the Local settings, numerical values are formatted according to the current OS installations.
**3 Decimal digits**
Number of decimal digits, which are used to format numerical values.
**4 Decimal separator**
Used as a decimal separator to separate numerical values in formatting.
**5 Group separator**
Used as a group separator when numerical values formatting.
**6 Group size**
The number of digits in each group in currency values formatting.
**7 Negative pattern**
This pattern is used to format negative values.

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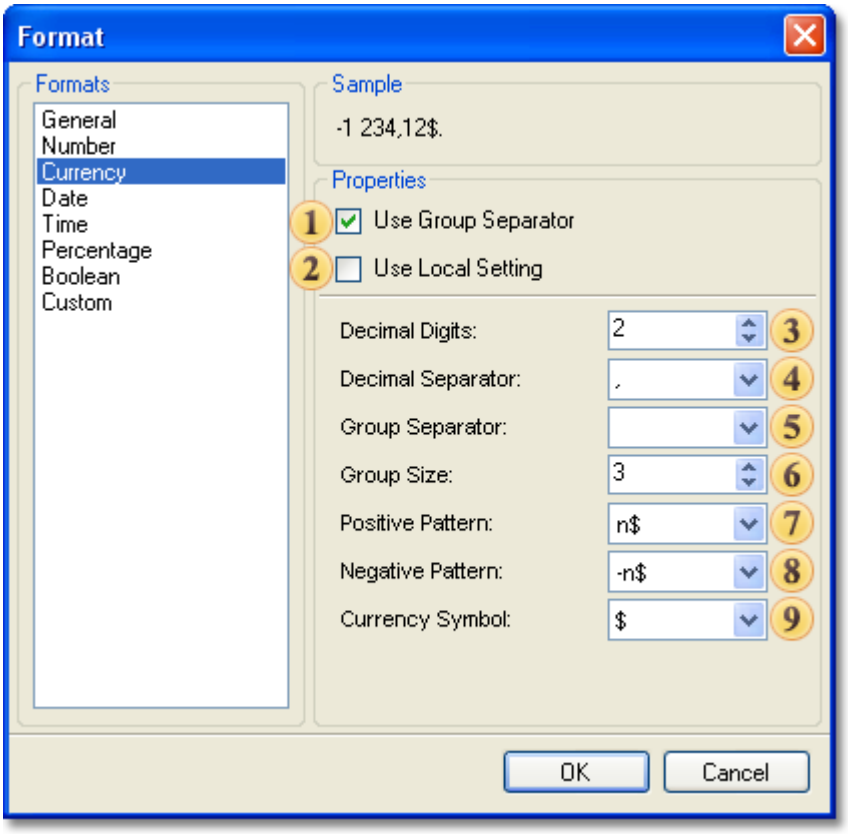
## 2.5.3. Currency Formatting

It is used for format currency values. Currency format can be used to output other numbers.




**1 Group separator**
When the Group Separator is used then currency values will be separated into number positions.

**2 Local setting**
When using the Local settings, currency values are formatted according to the current OS installations.

**3 Decimal digits**
Number of decimal digits, which are used to format currency values.

**4 Decimal separator**
Used as a decimal separator to separate currency values in formatting.

**5 Group separator**
Used as a group separator when currency values formatting.

**6 Group size**
The number of digits in each group in currency values formatting.

**7 Positive pattern**
This pattern is used to format positive values.

**8 Negative pattern**
This pattern is used to format negative values.

**9 Currency symbol**

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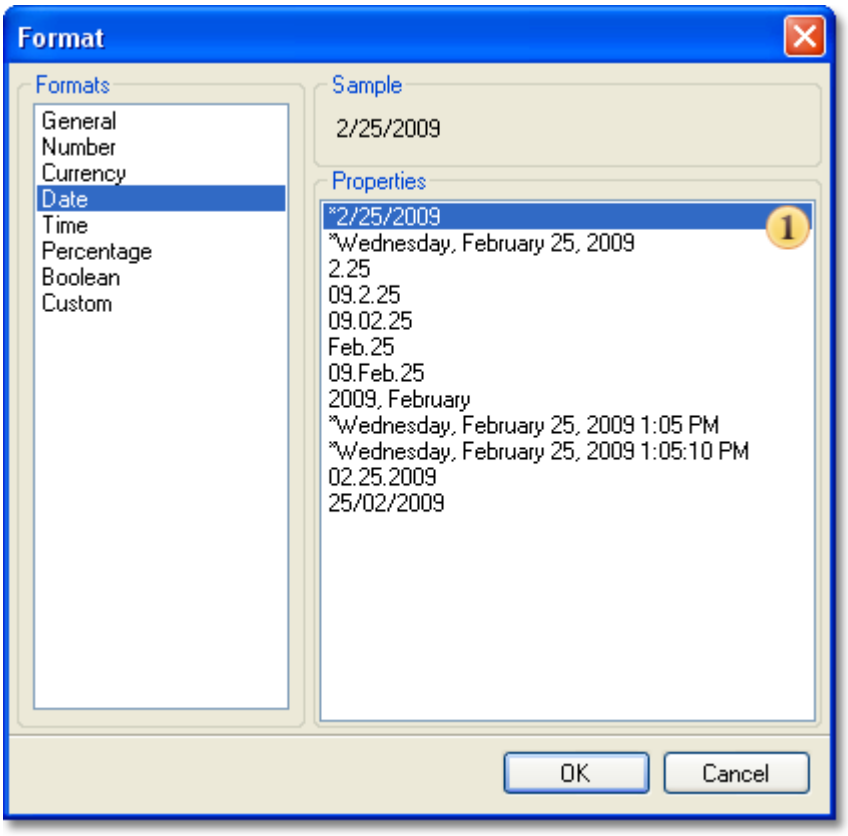
This symbol is used to define the currency name.

## 2.5.4. Date Formatting

The **Date** format is used to show a date. The **Date** format is selected from the set of formats: short date format, extended date format etc. In all formats, except ones which are marked with the (*) symbol, the order of elements is not changed.




**1 Date format**
The list format types.

## 2.5.5. Time Formatting

The **Time** format is used to show time. The **Time** format is selected from the set of formats: short date format and extended date format (with seconds).

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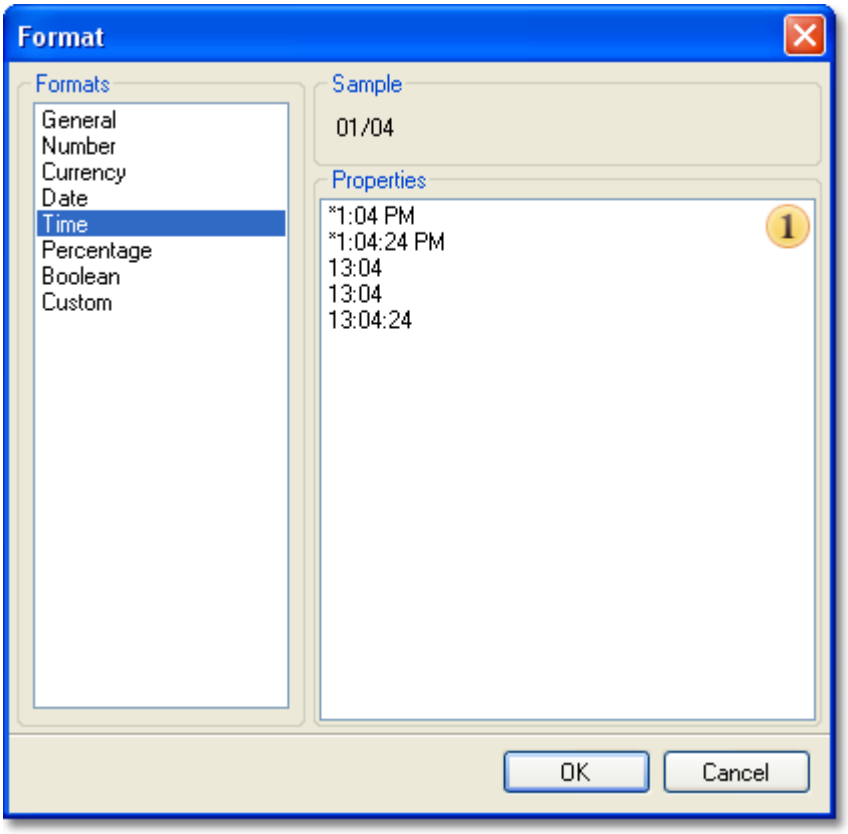


**Time format**

1 The list of format types

## 2.5.6. Percentage Data Formatting

This format is used to show percent values. When formatting, the value is multiplied by 100 and is output with the percent sign.

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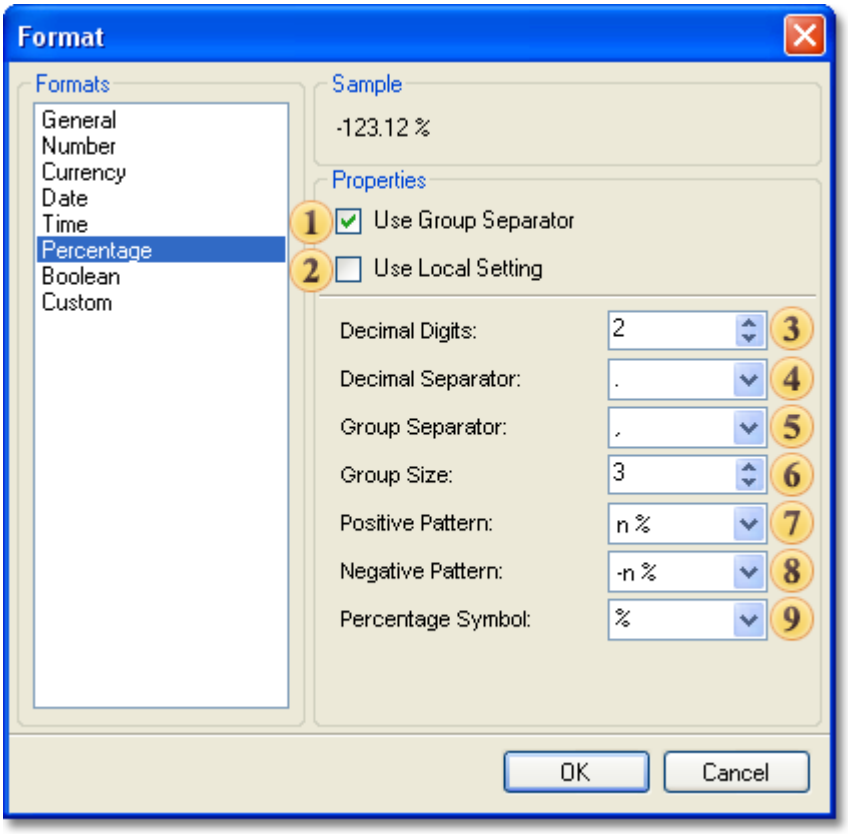


**1 Group separator**
When the Group Separator is used then currency values will be separated into number positions.

**2 Use local setting**
When using the Local settings, numerical values are formatted according to the current OS installations.

**3 Decimal digits**
Number of decimal digits, which are used to format numerical values.

**4 Decimal separator**
Used as a decimal separator to separate numerical values in formatting.

**5 Group separator**
Used as a group separator when numerical values formatting.

**6 Group size**
The number of digits in each group in currency values formatting.

**7 Positive pattern**
This pattern is used to format positive values.

**8 Negative pattern**
This pattern is used to format negative values.

**9 Percentage symbol**
The symbol will used as a percent sign.

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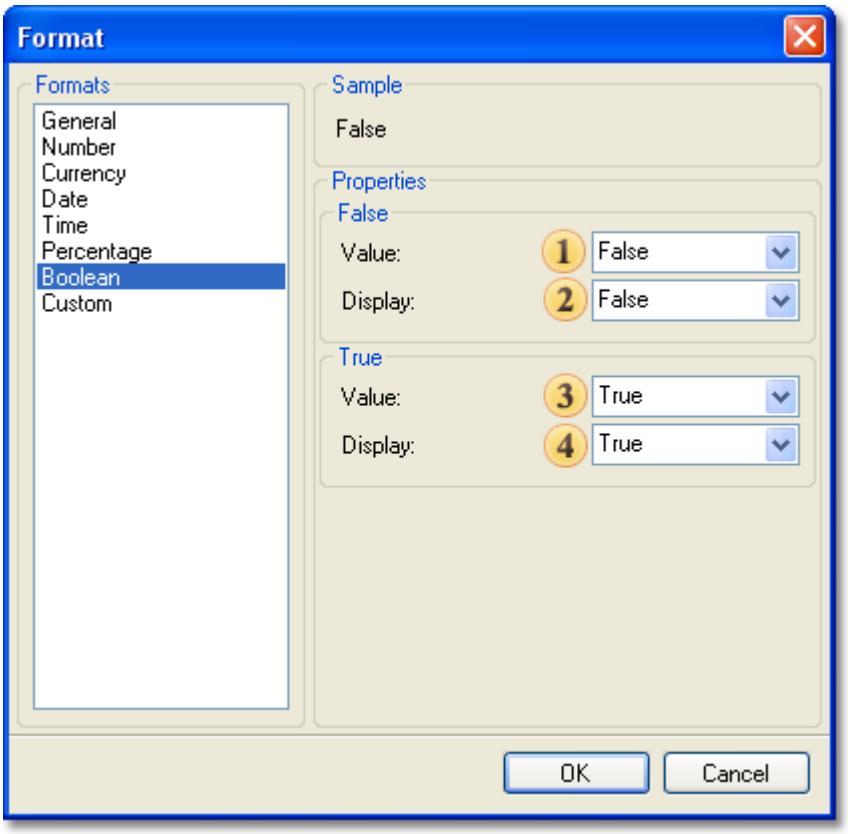
## 2.5.7. Boolean Values Formatting

This format is used to format values of the boolean type.




1. The string value to identify boolean values as **false**;
2. The string value to represent boolean value as **false**;
3. The string value to represent boolean value as **true**;
4. The string value to represent the boolean value as **true**.

## 2.5.8. Custom Formatting

This type is used to show values according to custom requirements. This type allows data formatting in the **Format Mask**.

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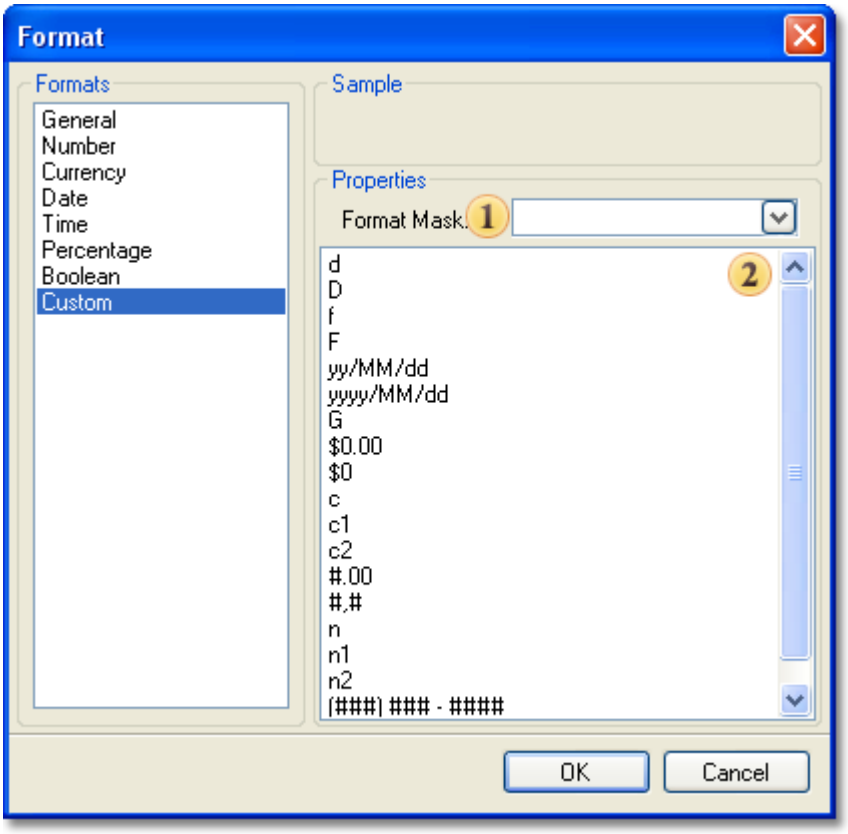


**1 Mask**
A string or an expression that set formatting mask.
**2 Predefined values**
The list of predefined values to format a string.

## 2.5.9. Formatting in Text

The **Text Format** tool allows values formatting using a lot of parameters and options. But this tool has one weak point. Formatting is applied on the whole text object. For example, if the text component is used to output data, then it is easy to format. But to do if it is required to format only one value from an expression? Or what to do if it is required to format two or more values of an expression? In this case it is recommended to use use the **string.Format** method. This method is used to make almost the same kind of formatting as if you use the **Text Format** tool. But the **string.Format** method is more flexible. For example, to format the value as a **currency** the **C** specificator is used:

```
Currency values: {string.Format("{0:C}", Value) }
```

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if **Value** is 123.12, then after formatting the line will be:

```
Currency values: $123.12
```

The **string.Format** method may have more than one parameter of formatting, for example:

```
Currency values: {string.Format("value1 - {0:C}, value2 - {0: 1}", Value1, Value2) }
```

Please read MSDN to get more information about **string.Format**.

## 2.6. HTML Tags

Stimulsoft Reports has the ability to format text using standard HTML formatting tags.

**Important:** Only a limited range of HTML tags are supported - for example you cannot use Ordered Lists (OL) or Unordered Lists (UL). If you need to achieve bullet points or numbers within your text your choices are to enter them manually or to use the RTF text editor component.

Sometimes it is necessary to make part of a text expression look Bold, Italic, or Underlined. For example you may wish to achieve something like this:

```
The fifth word is bold
```

HTML tags can help achieve this. The output shown above could be generated using the following expression:

```
The fifth word is <b>bold</b>
```

It is possible to get a similar result without using HTML by using the Rich text component, but there are some difficulties and the Rich text component works very slowly, so using HTML tags is often the best way to achieve the desired result.

HTML tags can be included only in the text part of expression, in other words their use is possible only in the **Text** property of the **Text** component.

**Important:** HTML tags can be included only in the text part of an expression.

For example, the following expressions are correct:

```
This is a simple <i>expression {1+2}</i>

This is a simple <i>expression</i> {1+2}
```

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```
This is a simple expression <i>{1+2}</i>
```

These expressions however are incorrect:

```
The is a simple <i>expression {1</i>+2}

The is a simple <i>expression {1+2</i>}

The is a simple expression {<i>1+2}</i>
```

In the examples above the HTML tags are placed within the body of an expression that will be calculated by C# or VB.Net, shown by the curly braces, so they are impossible to process.

**Important:** Do **NOT** place HTML tags inside the curly braces of any expression or the expression will fail.

## Available Tags

There are few limitations - most valid HTML style tags can be inserted, with the exception of ordered list and unordered list tags. If you need to generate such lists you can use the Rich Text control or create the layout manually.

**Important:** You cannot use Ordered and Unordered List tags within expressions.

HTML tags can be nested to an unlimited depth. For example:

```
This is a <b>simple <i>expression {1+2}</i></b>
```

If a tag is not closed, then the tag works to the end of the text line.

If HTML tags are used in a text expression then any line breaks in that expression are ignored. If you need to enforce a line break in your text, use the <br> tag.

**Note**. Use the <br> tag to break a line when using HTML tags.

## Activating HTML Tags

It is important to know that by default HTML tags in expressions are simply ignored. To allow the use of HTML tags it is necessary to set the **AllowHtmlTags** property of the Text component to true.

**Important:** Set the **AllowHtmlTags** property to true to allow the use of HTML tags in the text expression.

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### 2.6.1. HTML <font> Tag

The tag is used to add style, size, and color to a text expression. If there is no closing tag then all changed font characteristics will be applied from the beginning of the tag and to the end of the text.

**Syntax:**

```
<font face="FontName" color="#rrggbb" size="n"> </font>
```

**Parameters:**

**color** Defines the color of the text.
**face** Defines the font of the text.
**size** Defines the size of the text.

Not all of these parameters have to be used. The default value is set within the parameters of the text component, so ifthe font size of the text component is 8 points and the **size** parameter is not used in the tag, then the text will be output at 8 points. The same rule works for the other parameters.

**Example:**

If you enter the following expression:

```
Test <font color="red" face="Courier" size="18">Test</font> Test
```

then after calculation the result appearing in the report will be:

Test Test Test

#### 2.6.1.1. Color Parameter

The color parameter defines the color of the text in the font element. The color can be set in two ways:

**1. By Name**
You can define the colour by name - a collection of 147 color names is supported. If the report generator is not able to identify the color set, then it ignores the**color**parameter. For example:

```
<font color="red" ...>

<font color="black" ...>

<font color="white" ...>
```

### 2.By Hex Value

You can also specify the color using a hex (hexadecimal) value like"#ff0000". It is very important to add the hash symbol '#' before the hexadecimal notation.

The color is a combination of Red, Green and Blue values (#rrggbb). Each of the three colors may have hex values from 00 through to FF. The first two**rr**symbols indicate the red part of the color,**gg** symbols indicate the green part of the color, and**bb**symbols indicate the blue part. A color can be set in a short form using one symbol for each color. For example:

```
<font color="#FF0000" ...>

<font color="#F00" ...>

<font color="#FF0000" ...>

<font color="#998877" ...>

<font color="#FF00FF" ...>
```

**Important:** If the color value set is not recognized or is invalid, then the color specified in the Text component or in the tag is used.

### Alternative Tags

The tag or the tag can also be used to define the text color.For example:

```
<font-color="red">

<color="red">
```

## 2.6.1.2. Face Parameter

The face parameter defines the name of the font of the text within the font element. To use this parameter you must specify the font name. If the font is not found, then the font of the text component or the previous font specified in thetag is used.

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The sample below shows how to use the **face** parameter:

```
<font face="Arial" ...>
```

### Alternative Parameters

Instead of the "**face**" parameter the parameters "**name**" and "**family**" can be used. All these attributes are identical. For example:

```
<font face="Courier" ...>

<font name="Courier" ...>

<font family="Courier" ...>
```

All the text expressions above specify the same font.

### Alterative Tags

The tag is the same as the tag with the **face** parameter. For example:

```
<font-face="Arial">
```

## 2.6.1.3. Size Parameter

The size parameter defines the size of the text in the font element in points. For example:

```
<font size="14" ...>
```

If the expression is incorrectly formulated then the parameter is ignored.

### Alternative Tags

The font size can also defined separately using the tag. For example:

```
<font-size="14">
```

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## 2.6.2. HTML Tags to Change Font Style

The report generator supports nine tags for changing a font style: ****, **<i>**, **<u>**, **<s>**, **<sup>, <sub>, , <p>, <br>**. These HTML tags are called formatting tags. These formatting tags can make text bold, italic, sub/superscripted, and more.

The example below shows how the **** tag works in a text expression. If you enter the following expression:

```
This <b>text</b> is bold.
```

then after calculation the result appearing in the report will be:

This **text** is bold.

Note that the word 'text' is enclosed within the opening and closing  and  tags.

Formatting tags can be used in combination with other formatting tags to changing the text style. For example, if you enter the following expression:

```
This <i><b>text</b></i> is bold italic.
```

then after calculation the result appearing in the report will be:

This ***text*** is bold italic.

Style intersection is not allowed, i.e. formatting tags may not be nested partly inside and partly outside another formatting tag. For example:

```
<b>This <i>text</b> is bold</i> italic.  // This will fail
```

The available formatting tags are discussed in detail in the following topics.

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#### 2.6.2.1. HTML <b> Tag

The **<b>** tag is used to define bold text. The tag can be used in combination with other tags to change the text style. For example, if you enter the following expression:

```
Test <b>Test</b> Test
```

then after calculation the result appearing in the report will be:

Test **Test** Test

If a tag is not closed then the formatting is applied to from the opening tag to the end of the text expression.

#### 2.6.2.2. HTML <i> Tag

The **<i>** tag is used to define italic text. The tag can be used in combination with other tags to change the text style. For example, if you enter the following expression:

```
Test <i>Test</i> Test
```

then after calculation the result appearing in the report will be:

Test *Test* Test

If a tag is not closed then the formatting is applied to from the opening tag to the end of the text expression.

#### 2.6.2.3. HTML <u> Tag

The **<u>** tag is used to define underlined text. The tag can be used in combination with other tags to change the text style. For example, if you enter the following expression:

```
Test <u>Test</u> Test
```

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then after calculation the result appearing in the report will be:

Test Test Test

If a tag is not closed then the formatting is applied to from the opening tag to the end of the text expression.

### 2.6.2.4. HTML <s> Tag

The **<s>** tag is used to define strikethrough text, that is text with a horizontal line through the center. The tag can be used in combination with other tags to change the text style. For example, if you enter the following expression:

```
Test <u>Test</u> Test
```

then after calculation the result appearing in the report will be:

Test ~~Test~~ Test

If a tag is not closed then the formatting is applied to from the opening tag to the end of the text expression.

### 2.6.2.5. HTML <sup> Tag

The **<sup>** tag is used to define a superscripted text. Superscript text appears half a character above the baseline. The tag can be used in combination with other tags to change the text style. For example, if you enter the following expression:

```
Test <sup>Test</sup> Test
```

then after calculation the result appearing in the report will be:

Test $^{Test}$ Test

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If a tag is not closed then the formatting is applied to from the opening tag to the end of the text expression.

### 2.6.2.6. HTML <sub> Tag

The <**sub**> tag defines a subscripted text. A subscripted text appears half a character below the baseline. The example below shows how the **<sub>** tag works:

```
Test <sub>Test</sub> Test
```

The result of output:

Test $_{Test}$ Test

### 2.6.2.7. HTML  Tag

The <**strong**> tag indicates strong emphasis. It has an end tag. A text within this tag is more important than a flat text. It is usually rendered in bold font style. The example below shows how the <**strong**> tag works:

```
Text <strong>Text</strong> Text
```

The result of output:

Text **Text** Text

### 2.6.2.8. HTML <p> Tag

The <**p**> tag defines a paragraph. It has an end tag. The example below shows how the <**p**> tag works:

```
```

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```
<p>This is a text in a paragraph.</p>
This is a text after the paragraph.
```

The result of output:

```
This is a text in a paragraph.

This is a text after the paragraph.
```

#### 2.6.2.9. HTML <br> Tag

The <**br**> tag inserts a single line break. It has no end tag. The example below shows how the <**br**> tag works:

```
How it<br> works.
```

The result of output:

```
How it
works.
```

### 2.6.3. HTML <background-color> Tag

The **<background-color>** tag is used to change the background color of a text element. By default the background color is set the same as the color specified in thetag, or in the text component properties if no font has been specified.

However, if you place text between a pair of start and end background color tags, then the specified background color will be applied to that text. For example, if you enter the following expression:

```
Test Test Test
```

then after calculation the result appearing in the report will be:

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```
TestTestTest
```

## 2.6.4. HTML <text-align> Tag

The <text-align> tag specifies the horizontal alignment of an element with respect to the surrounding context in the text component. The tag supports four modes of alignment: **left**, **right**, **center,** and **justify**. For example, if you enter the following expression:

```
Test<br>
<text-align="right">Test</text-align><br>
Test<br>
```

then after calculation the result appearing in the report will be:

## 2.6.5. HTML <letter-spacing> Tag

The <letter-spacing> tag is used to define the space between letters. The value of this tag can be set in any units, and the value can be negative, so it is very important to make sure that a text is readable after applying this tag. By default the value of this tag is 0.

For example, if you enter the following expression:

```
Test<br><letter-spacing="0.5">Test</letter-spacing>
```

then after calculation the result appearing in the report will be:

Test
T e s t

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## 2.6.6. HTML <word-spacing> Tag

Using the **<word-spacing>** tag it is possible to define the space between each words. If the **<text-align>** tag with the **"justify"** value is used, then the **<word-spacing>** tag is ignored. This happens because the interval between words is already specified and a line of a text is aligned by both left and right sides. The example below shows how the **<word-spacing>** tag works:

```
Test <word-spacing="2"> Test </word-spacing>Test
```

The result of output:

Test Test Test

## 2.6.7. HTML <line-height> Tag

The **<line-height>** tag sets the height of the text line. The tag is set as the multiplier for the basic line height. By default the value if the **<line-height>** tag is 1. The example below shows how this tag works:

```
Test<line-height="1.5"><br></line-height>Test<line-height="0.7"><br></line-height>Test
```

The result of output:

Test

Test
Test

## 2.6.8. Special Characters

Sometimes it is necessary to use a phrase, for example, in French or German on the website page or to display an example of HTML code on the page. For this purpose, the braces characters, opening "<" and closing ">" are used. They define the first and last character of the tag. For example, in order to display the "greater-than" sign or the opening "<" brace, the "**&lt**;" character is used. Each character has its **&-ASCII** code, which has a specific **&#**** format, where **** is a numeric character. Pointing a **&-ASCII** code, the appropriate symbol will be output on the page. Also, some characters have **&-Name** codes, which have the **&**** formats where **** is an alphabetic names of characters. Below are the tables with the most frequently used characters:

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**Special Characters**

| Common Name | ISO Latin-1 Numeric Entity | &-ASCII | &-Name |
|---|---|---|---|
| Quotation mark | " | " | " |
| Ampersand | & | & | & |
| Non-breaking space | |   |   |
| Inverted exclamation point | ¡ | ¡ | &ixcl; |
| Cent | ¢ | ¢ | ¢ |
| Pound sterling | £ | £ | £ |
| General currency | ¤ | ¤ | ¤ |
| Yen sign | ¥ | ¥ | ¥ |
| Broken vertical bar | ¦ | ¦ | ¦ |
| Section sign | § | § | § |
| Dieresis | ¨ | ¨ | ¨ |
| Copyright | © | © | © |
| Feminine ordinal | ª | ª | ª |
| Left guillemot | « | « | « |
| Not sig | ¬ | ¬ | ¬ |
| Soft hyphen | - |  |  |
| Registered trademark | ® | ® | ® |
| Macron | ¯ | ¯ | ¯ |
| Degree sign | ° | ° | ° |
| Plus or minus | ± | ± | ± |
| Superscript 2 | ² | ² | ² |
| Superscript 3 | ³ | ³ | ³ |
| Acute accent | ´ | ´ | &acuate; |
| Mu | µ | µ | µ |
| Pilcrow | ¶ | ¶ | ¶ |
| Middle dot | · | · | · |
| Cedilla | ¸ | ¸ | ¸ |
| Superscript 1 | ¹ | ¹ | ¹ |
| Masculine ordinal | º | º | º |
| Right guillemot | » | » | » |

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| | | | |
|---|---|---|---|
| Fraction one-fourth | ¼ | ¼ | ¼ |
| Fraction one-half | ½ | ½ | ½ |
| Fraction three-fourths | ¾ | ¾ | ¾ |
| Inverted question mark | ¿ | ¿ | ¿ |

**UPPERCASE LATIN-1 CHARACTERS**

| Name | Character | &-ASCII | &-Name |
|---|---|---|---|
| Capital A, grave accent | À | À | À |
| Capital A, acute accent | Á | Á | Á |
| Capital A, circumflex accent | Â | Â | Â |
| Capital A, tilde | Ã | Ã | Ã |
| Capital A, dieresis | Ä | Ä | Ä |
| Capital A, ring | Å | Å | Å |
| Capital AE diphthong | Æ | Æ | Æ |
| Capital C, cedilla | Ç | Ç | Ç |
| Capital E, grave accent | È | È | È |
| Capital E, acute accent | É | É | É |
| Capital E, circumflex accent | Ê | Ê | Ê |
| Capital E, dieresis | Ë | Ë | Ë |
| Capital I, grave accent | Ì | Ì | Ì |
| Capital I, acute accent | Í | Í | Í |
| Capital I, circumflex accent | Î | Î | Î |
| Capital I, dieresis | Ï | Ï | Ï |
| Capital Eth | Ð | Ð | Ð |
| Capital N, tilde | Ñ | Ñ | Ñ |
| Capital O, grave accent | Ò | Ò | Ò |
| Capital O, acute accent | Ó | Ó | Ó |
| Capital O, circumflex accent | Ô | Ô | Ô |
| Capital O, tilde | Õ | Õ | Õ |
| Capital O, dieresis | Ö | Ö | Ö |
| Multiply sign | × | × | × |
| Capital O, slash | Ø | Ø | Ø |

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| | | | |
|---|---|---|---|
| Capital U, grave accent | Ù | Ù | Ù |
| Capital U, acute accent | Ú | Ú | Ú |
| Capital U, circumflex accent | Û | Û | Û |
| Capital U, dieresis | Ü | Ü | Ü |
| Capital Y, acute accent | Ý | Ý | Ý |
| Capital Thorn | Þ | Þ | Þ |
| German sz ligature | ß | ß | ß |

**LOWERCASE LATIN-1 CHARACTERS**

| Name | Character | &-ASCII | &-Name |
|---|---|---|---|
| Lowercase a, grave accent | à | à | à |
| Lowercase a, acute accent | á | á | á |
| Lowercase a, circumflex accent | â | â | â |
| Lowercase a, tilde | ã | ã | ã |
| Lowercase a, dieresis | ä | ä | ä |
| Lowercase a, ring | å | å | å |
| Lowercase ae ligature | æ | æ | æ |
| Lowercase c, cedilla | ç | ç | ç |
| Lowercase e, grave accent | è | è | è |
| Lowercase e, acute accent | é | é | é |
| Lowercase e, circumflex accent | ê | ê | ê |
| Lowercase e, dieresis | ë | ë | ë |
| Lowercase i, grave accent | ì | ì | ì |
| Lowercase i, acute accent | í | í | í |
| Lowercase i, circumflex accent | î | î | î |
| Lowercase i, dieresis | ï | ï | ï |
| Lowercase eth | ð | ð | ð |
| Lowercase n, tilde | ñ | ñ | ñ |
| Lowercase o, grave accent | ò | ò | ò |
| Lowercase o, acute accent | ó | ó | ó |
| Lowercase o, circumflex accent | ô | ô | ô |
| Lowercase o, tilde | õ | õ | õ |

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| | | | |
|---|---|---|---|
| Lowercase o, dieresis | ö | ö | ö |
| Division sign | ÷ | ÷ | ÷ |
| Lowercase o, slash | ø | ø | ø |
| Lowercase u, grave accent | ù | ù | ù |
| Lowercase u, acute accent | ú | ú | ú |
| Lowercase u, circumflex accent | û | û | û |
| Lowercase u, dieresis | ü | ü | ü |
| Lowercase y, acute accent | ý | ý | ý |
| Lowercase thorn | þ | þ | þ |
| Lowercase y, dieresis | ÿ | ÿ | ÿ |

## 2.7. Rich Text Output

Stimulsoft Reports allows users to include **Rich Text** formatted (**RTF**) text in reports, without any limitations.

The **RichText** component is designed for working with rich text, and can automatically change its size depending on the size of the **RTF** text within it. It can process expressions, and supports a wide variety of styles, processing at the end of report rendering, etc.

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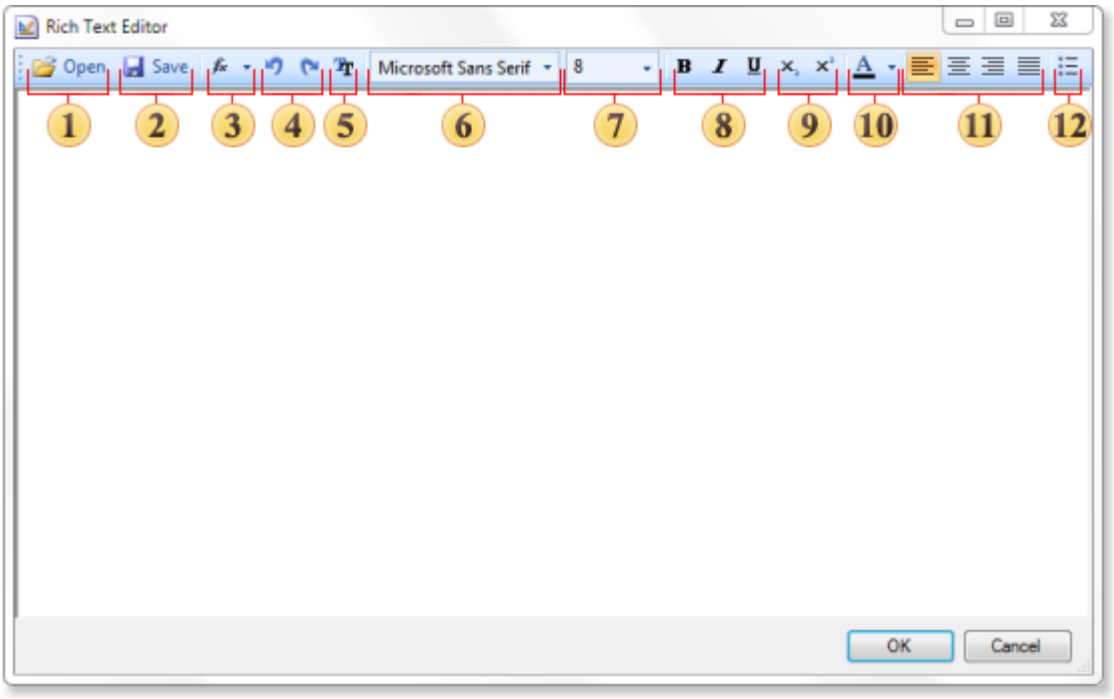
## 2.7.1. Rich Text Editor

A special editor provided as part of the **RichText** component is used to edit RTF text. This editor is able to load and save RTF text in files, change a font, change font size, change text color, insert expressions etc. No other editor is required to edit RTF text, everything you need is provided within the editor.

The editor is displayed automatically when you insert a **RichText** component, and can be re-opened at any time by double-clicking on the component.

The editor and its controls look something like this:




| | | |
|---|---|---|
| 1 | The **Open** button | Displays a standard File Open dialog to allow the content of an existing ***.rtf** file to be loaded into the component. |
| 2 | The **Save** button | Displays a standard File Save dialog to allow the component RTF text to be saved to an external ***.rtf** file. |
| 3 | The **Insert** button | Displays options allowing you to Insert an expression, function or variable into the component at the current cursor position. |
| 4 | **Undo** and **Redo** buttons | **Undo** erases the most recent change to a report reverting it to the previous state. The **Redo** command does the opposite of undo. |
| 5 | The**Font**button | Displays a standard Font dialog to allow you to set options such as the font family, style, size etc. |
| 6 | The **Font Face** combo | Displays the name of the current font. The font of currently selected text can be changed by selecting a new font from the drop down list |

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| | | |
|---|---|---|
| | | of font faces. |
| 7 | The **Font Size** combo | Displays the size of the current font. The size of currently selected text can be changed by selecting a new size from the drop down list of font faces. |
| 8 | **Bold**,**Italic**, **Underline**buttons | The Font style buttons display the style of the current font. The style of currently selected text can be changed by clicking these buttons to apply or remove styles as required. It is possible to have a font style that combines any number of style aspects, so for example you could have bold underlined text if required. |
| 9 | **Subscript** and **Superscript**buttons | Displays the **Subscript** and **Superscript** font styles of the currently selected text. These attributes can be changed by clicking the buttons to apply the required attribute.**Subscript**is text is positioned slightly lower than the remaining text on a line whilst **Superscript** is positioned slightly higher. For example, a footnote or endnote number reference is an example of superscript, and a scientific formula might use subscript text. The **Subscript** and **Superscript** styles are mutually exclusive, so selecting one will automatically deselect the other. |
| 10 | The **Color** button | Displays a standard Color dialog to allow the color of the currently selected text to be changed. |
| 11 | **Text Alignment** buttons | Displays the alignment of the currently selected text, which can be **Left Align**, **Center**, **Right Align**, or **Justify**. The alignment of the currently selected text can be changed by clicking the buttons to apply the required attribute. The **Text Alignments** are mutually exclusive, so selecting one will automatically deselect the other. |
| 12 | The **Bullets** button | Displays the bullet status of the currently selected text. The bullet style of currently selected text can be changed by clicking this button to apply or remove bullets as required. |

## 2.7.2. Expressions in Rich Text

The RTF text is an expression in the **RichText** component. There are no significant differences between working with expressions in the **RichText** component and other text components.

The syntax and use of expressions is similar to the syntax and use of expressions in text components, but there is one particular issue to consider - any applied formatting must be applied to the full code insertion and not just part of it.

Suppose that you want the calculated value in the RTF text to be a specific color. It is vital that the colour attribute is applied to the full expression from the opening brace "{" to the closing brace "}" including those symbols. For example:

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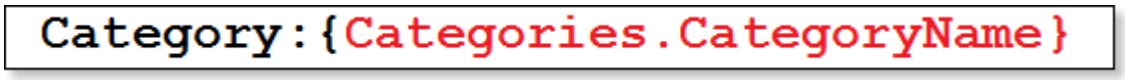
Formatting is fully applied to the expression. This expression will work correctly.

Formatting is applied to only part of the expression. This expression will not work.

Formatting is fully applied to the expression, but the braces are not included. This expression will not work.




Formatting does not include the opening brace. This expression will not work.

You should know that in the expressions of the RichText component only plain text can be inserted this way (without formatting commands). So it is not possible to insert the RTF text. You can only assign all of its properties with the help of the DataColumn.

### 2.7.3. Loading Rich Text From Data Field

The **RichText** component can load the RTF text from the data field using the **DataColumn** property. To load the RTF text simply select a field from the data dictionary tree. When rendering the report generator will automatically load the RTF text for you.

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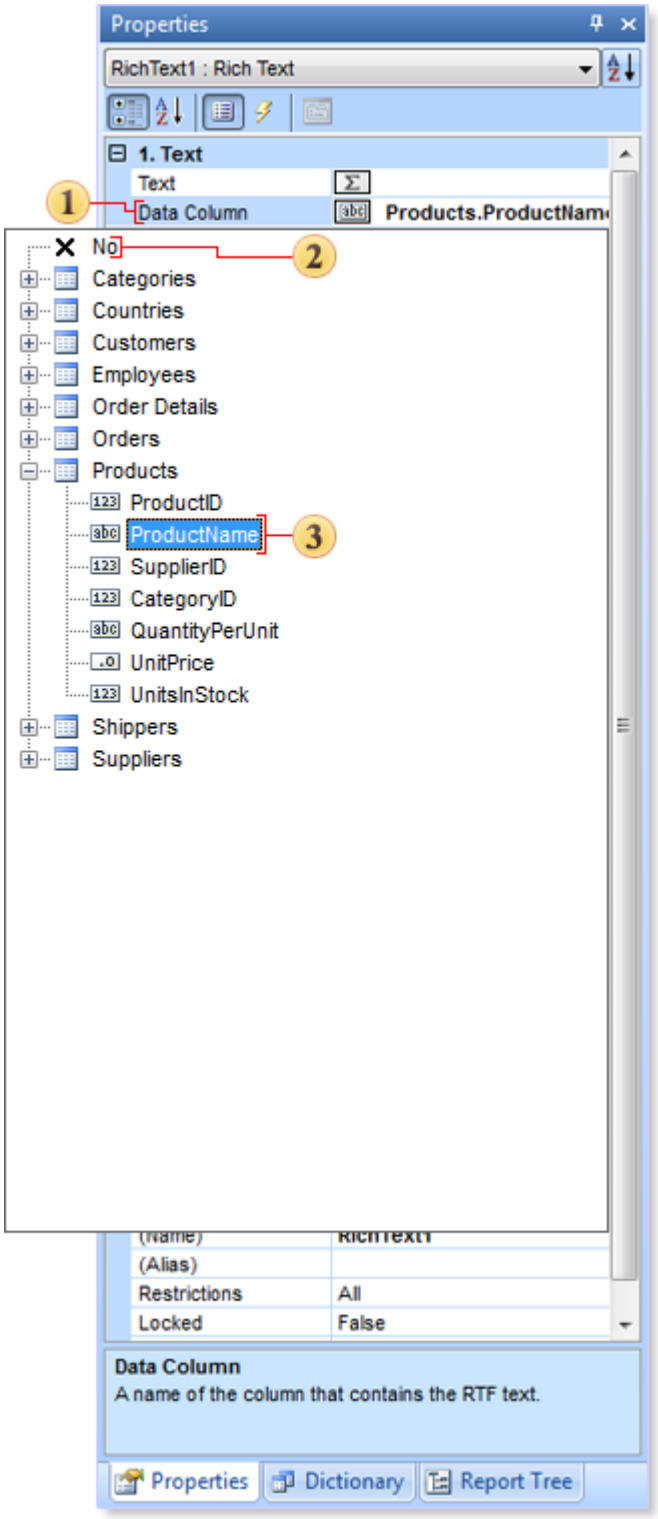


| | | |
|---|---|---|
| 1 | **The DataColumn property** | This property is used to indicate from which data field the RTF text should be loaded. Click the button beside to select the relevant column. |
| 2 | **Null node** | Selecting this node means that the RTF text is not |

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| | | |
|---|---|---|
| | | loaded from a data field. |
| 3 | **Selected field** | The Data field from which the RTF text will be loaded . |

## 2.8. Graphic Information Output

Sometimes it is necessary to add images to reports. They can be photos of goods, images of colleagues etc. Sometimes it is necessary to place a company logo. The **Image** component is used to output images. This component supports the following types of images: **BMP, JPEG, TIFF, GIF, PNG, ICO, EMF,** and **WMF**.

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# Images

| Country name | Flag | Country name | Flag |
|---|---|---|---|
| Afghanistan | | Albania | |
| Algeria | | American Samoa | |
| Andorra | | Angola | |
| Anguilla | | Antigua and Barbuda | |
| Argentina | | Armenia | |
| Aruba | | Ashmore and Cartier Islands | |
| Australia | | Austria | |
| Azerbaijan | | Bahamas | |
| Bahrain | | Baker Island | |
| Bangladesh | | Barbados | |
| Bassas da India | | Belarus | |
| Belgium | | Belize | |

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## 2.8.1. Loading Images

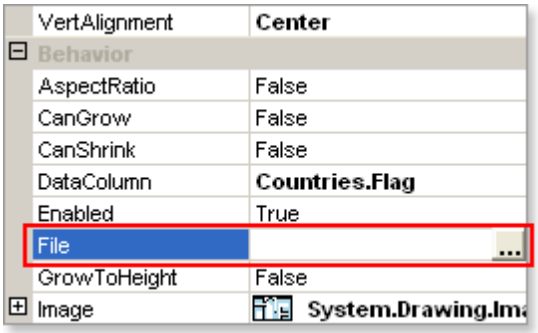
To print an image it is necessary to use the **Image** component. But an image should be loaded first. There are three ways:

1. Load an image from a file;
2. Load an image from the report code;
3. Load an image from the data field.

The below topics describe all these ways.

### Loading an image from a file

An image can be loaded from a file. Using the **File** property it is necessary specify the file path that contains an image. When report rendering, the report generator will check whether such a file does exist and contains an image. Then the image will be printed.




### Loading an image from a report code

Sometimes it is not convenient to store images for report rendering in files. The report generator can save it in the report code. Using the Image property it is possible to load an image from the report code. After loading the image will be saved in the report code.

**Important!** Do not use this way to output images with the size >100kb. This can be critical for speed of working with the report designer.

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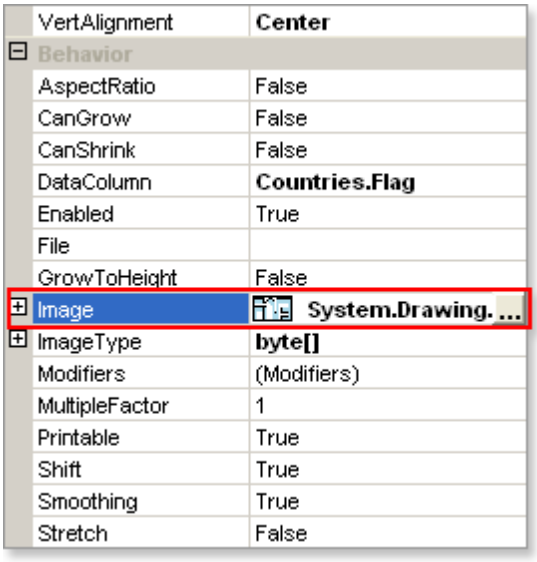


## Loading an image from a data field

All it is required to load images from a data field is to specify the data field, from what the image will be loaded. The **DataColumn** property is used for this.

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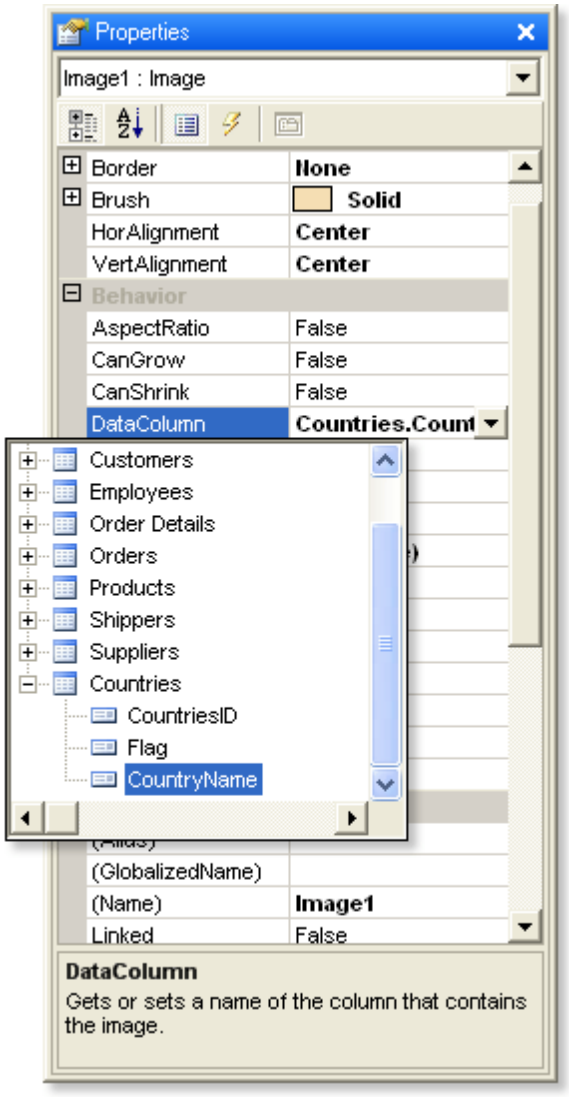


## 2.8.2. Image Stretching

Often image size does not fit to the component size. In this case free space can be found in a component. Sometimes an image size is bigger that the component size. In such situations it is necessary to stretch images to fill the component with the image. For this, it is necessary to put the **Stretch** property of the Image component to **true**.

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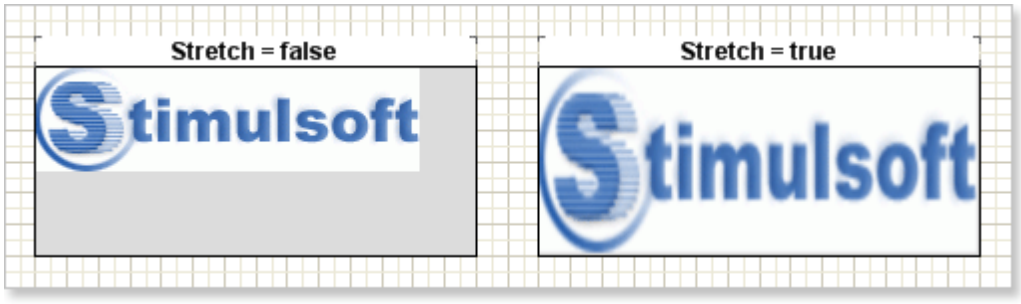
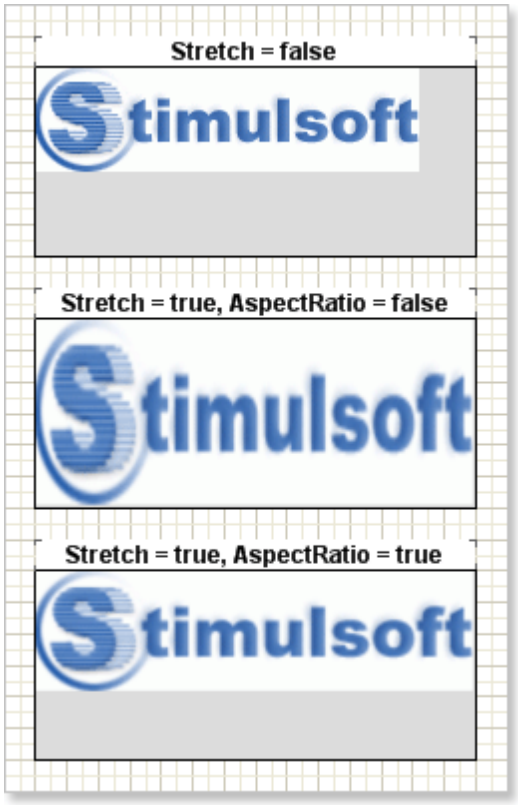



After setting the **Stretch** property to **true** the image will fill all free space of the component. When stretching, the image its proportions can be broken. To stretch an image and keep its proportions it is necessary to set the **AspectRatio** property to **true**. And the **Image** component will always keep proportions of images.




**Important!** The **AspectRatio** property is in process only when the image stretching is enabled.

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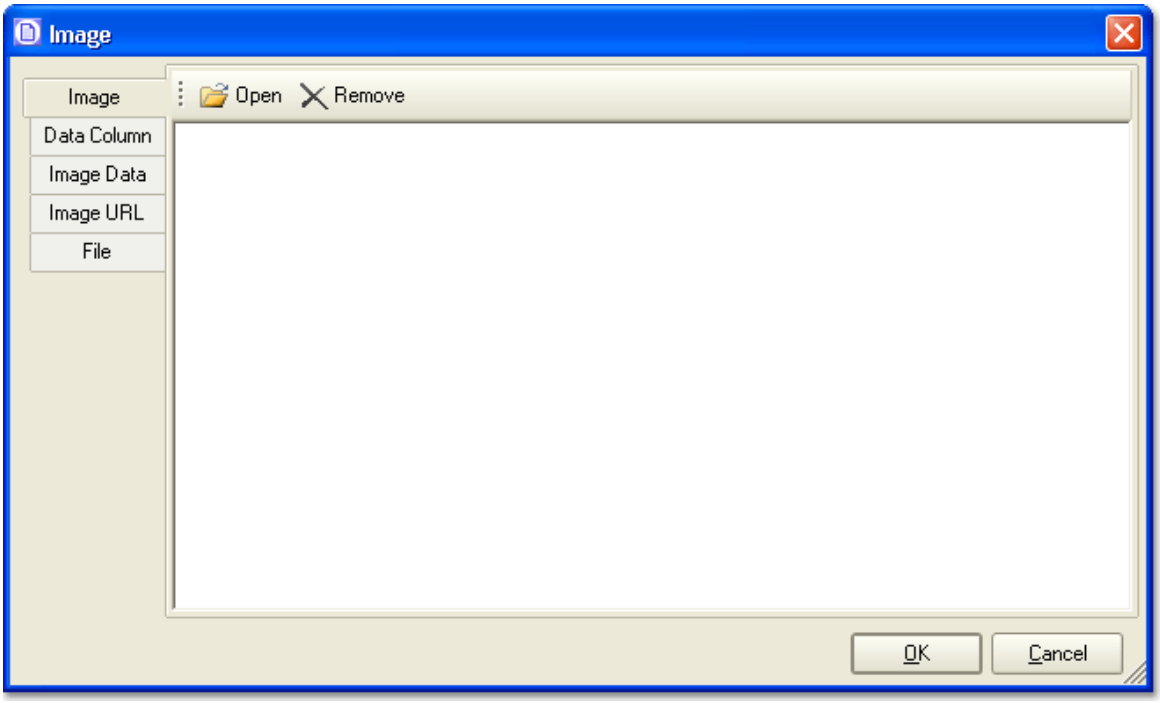
## 2.8.3. Resources of Images

The **Image** component is used to output images in a report. The way of loading an image can be selected using the the editor of properties of components. This editor is called by double clicking on the **Text** component or clicking the ... button for calling a designer of **Image** property in the **Property Editor**.
There are the following ways to load images to the **Image** component:

1. Load an image when creating this component in the designer. The **Open** button is used to load an image to the **Text** component in the designer. When saving the file, the image will be saved in the report code. The **Remove** button allows deleting selected components from the designer.




2. From the field of the data base. Select the field of the data base and, in runtime, the image will be loaded to the **Image** object of a report.

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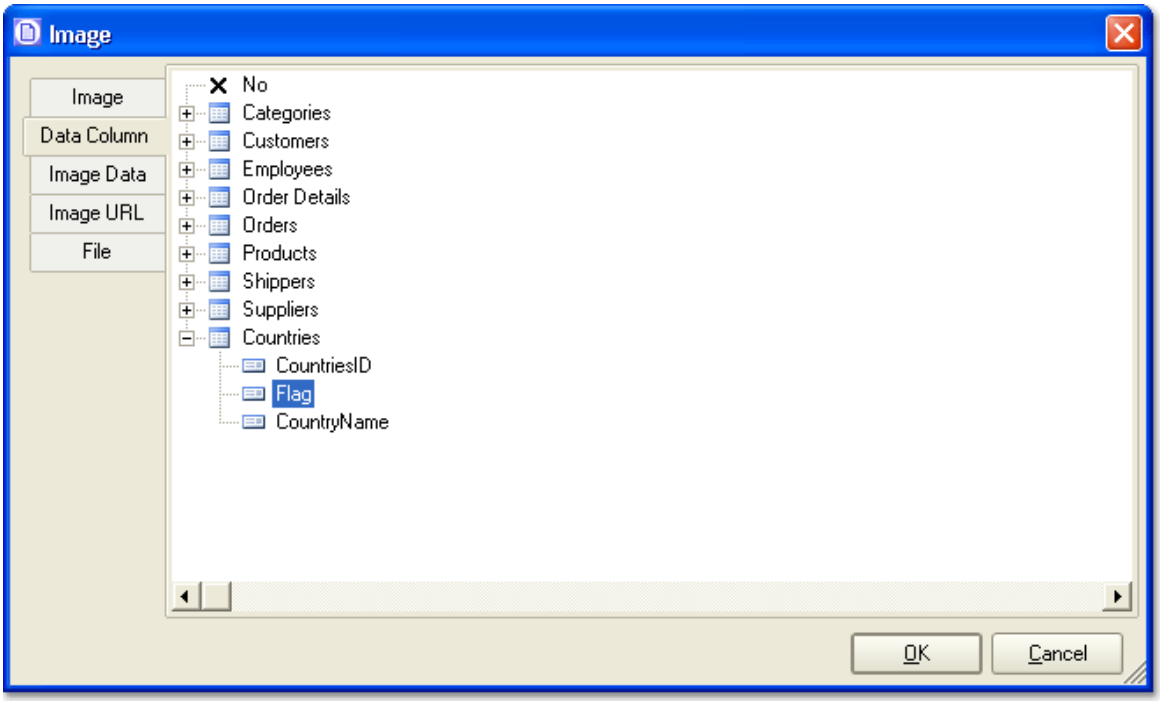
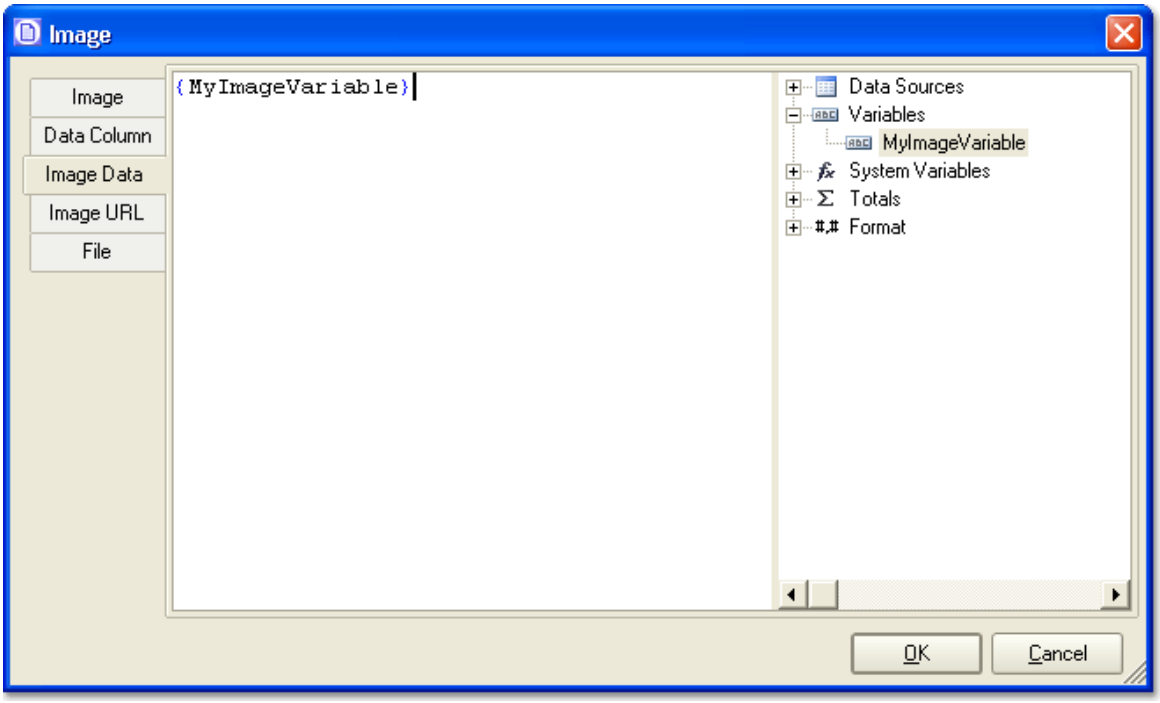



3. From variable. Create a variable in the data dictionary with the **Image** type. This variable can be used in runtime for working with images.




**Notice.** Instead of variable the expression can be used. This expression will return an image.

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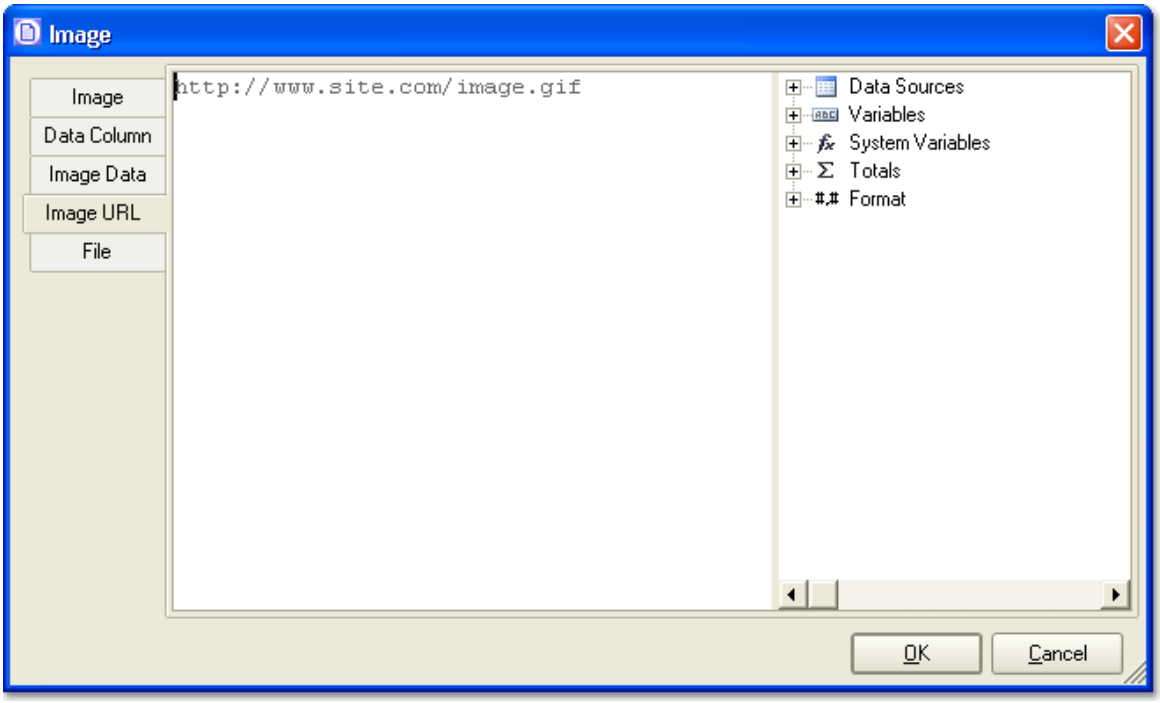
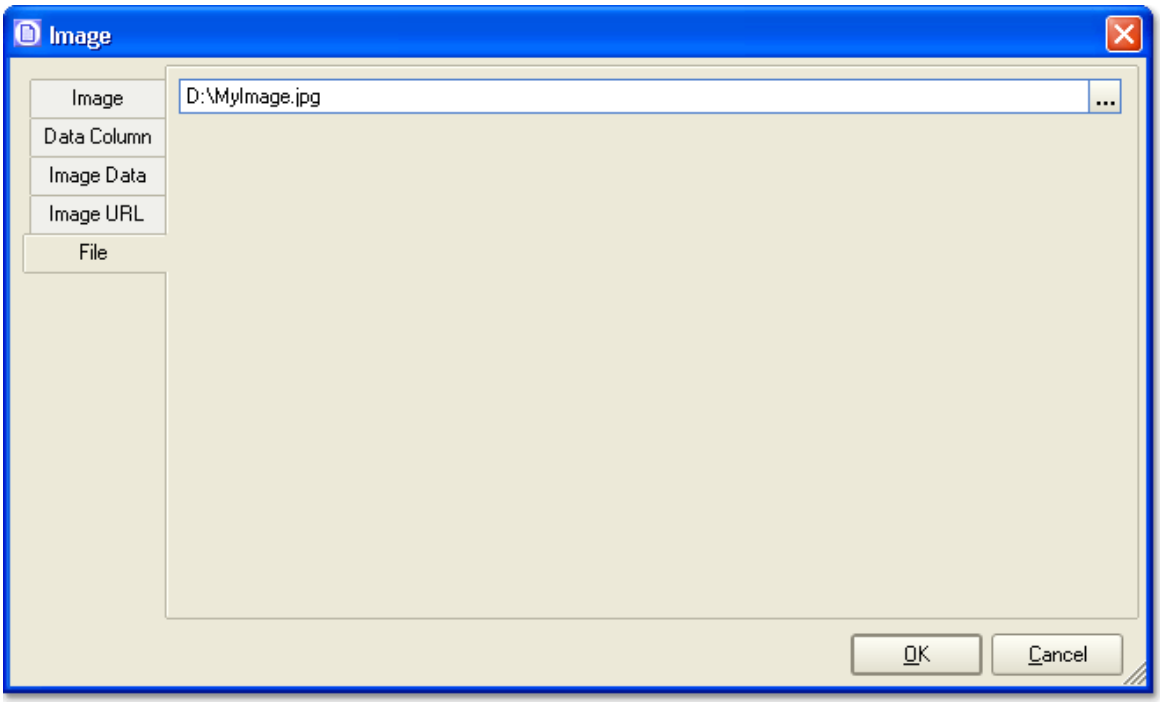
4. By the internet link. This way works at runtime.




5. From file. File selection allows loading images from image files. Images of the standard Bitmap type and *.emf and *.wmf metafiles are supported. Images are not serialized in the code.




Also it is possible to load images from a code of application before report rendering:

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```
C#

StiReport report = new StiReport();
report.Load("D:\\myimage.mrt");
StiImage image = new StiImage();
image.Image = Image.FromFile("d:\\SomeImage.jpg");
report.Compile();
report["MyImage"] = image;
report.Show();
```

## 2.9. Autosize

Automatic resizing of components is controlled by two properties available in report components: CanGrow and CanShrink.

### Can Grow

If the CanGrow property is set to true the component can automatically increase its size if the information contained within it does not fit in the space available. If it is set to false the information will be cropped to the component size, as in the examples below:

### Can Shrink

If the CanShrink property is set to true the component can automatically reduce its size so that it fits exactly to the size of the text or image being displayed. If it is set to false the component remains the same size leaving unused space around the information it contains, as in the examples below.

**Using this property will help you to prevent wasted space on report pages**

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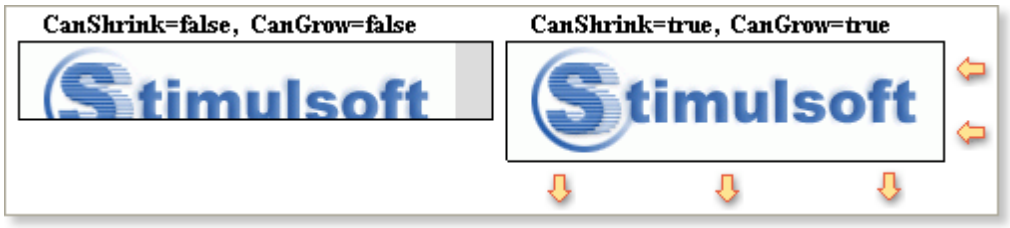
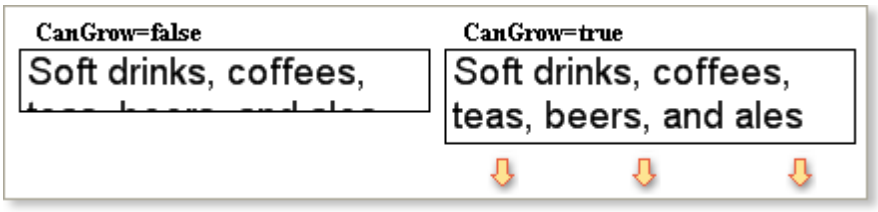
The report generator allows you to set both CanGrow and CanShrink properties. If you set both properties to true the component will automatically increase or decrease in size whenever appropriate. The example below shows an image component that is not large enough to support the height of the image but is too wide for the image width. By setting the CanGrow and CanShrink properties to true the size of the component changes automatically and exactly matches the size of the image.

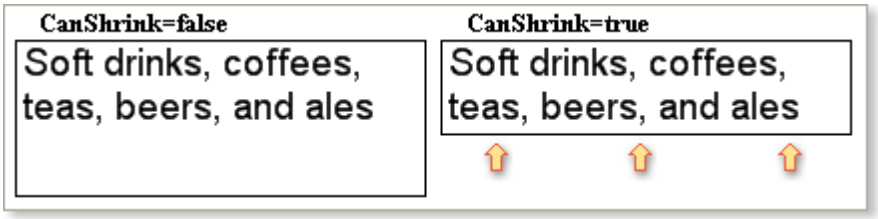



## 2.9.1. Automatically Resizing Text

The automatic resizing of text behaves differently from other components. The **CanGrow** and **CanShrink** properties affect only the height of a text component and not the width. The example below shows an example of the **CanGrow** property causing the text height to change:




The **CanShrink** property works in the opposite way, so if it is set to true and there is more space than is needed for the text the report generator will automatically decrease the height of the text component.




As with other components it is possible to set both properties to true. In this case, the height will automatically increase or decrease depending on the size of a text.

### Word Wrap Property

The **WordWrap** property controls whether or not the text in the control automatically wraps when it becomes too long to fit in a single line. If the **WordWrap** property is set to false then the text is cropped at the border of the component, but when set to true new lines are created until all the text is displayed on multiple lines.

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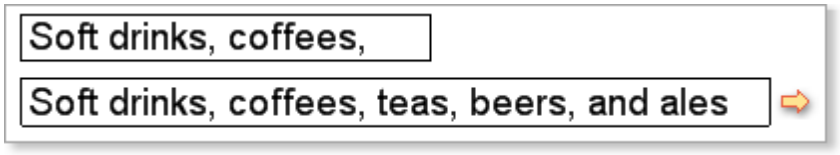
When automatically resizing a text component with the **WordWrap** property set to false the report generator will calculate the new size based on the height of a single line only. If you want the report generator to increase the height of the component based on all the text lines then the value of the **WordWrap** property should be set to true so that the text automatically wraps and the calculation can be based on the combined height of all the text lines.

### The AutoWidth property

In addition to the **CanGrow** and **CanShrink** properties the **AutoWidth** property can affect the way a text component changes size. If the **AutoWidth** property is set to true then the text component will automatically change its width to match the width of the text. The **CanGrow**, **CanShrink**, and **AutoWidth** properties can be used simultaneously.




If the **WordWrap** property is set to false, then the height of the text depends on settings of the **CanGrow** and **CanShrink** properties. If the **WordWrap** property is set to false, then the width will be automatically changed.

**Important:** If the **WordWrap** property is set to false then the height of the text depends on the **CanGrow** and **CanShrink** properties. If the **WordWrap** property is set to false then it will change the width of the text.

## 2.9.2. Automatically Resizing Panels

Because **Panels** are only containers and output no visual information in the report it may seem that the **CanGrow** and **CanShrink** properties have no relevance, but this is not the case.

Panel components may contain other components which have specified sizes and positions. If some of the component positions mean that their boundaries cross the border of the panel then setting the **CanGrow** property to true will cause the panel container to be automatically resized so that the child components are wholly enclosed within it. The picture below shows how the **CanGrow** property works:

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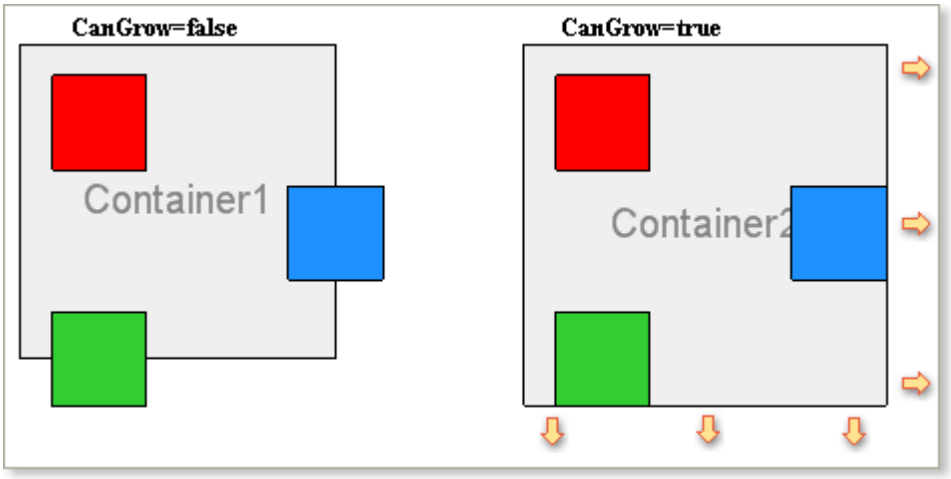
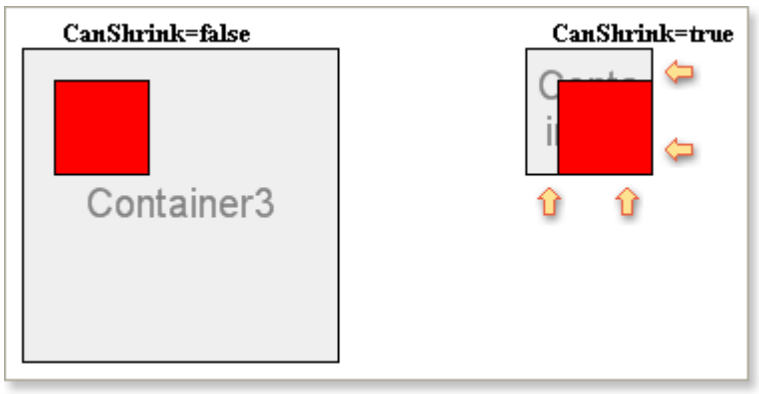



If the **CanShrink** property is set to true and the bounds of the combination of all the components contained within it are less than the bounds of the panels the panel size will automatically reduce to match the overall size of all components.




## 2.9.3. Automatically Resizing Bands

Because bands are inherited from **Panels**, they change their size in the same way. The size of the **Band** can be automatically changed depending on the size of components positioned on the band.

### CanGrow Property

It should be noted that most types of band can only automatically change their height - the exception is cross-bands which change their width.

For example, if there is a component on the band which crosses the lower boundary and you set the **CanGrow** property of the band to true, the band height will be automatically increased until the entire component is contained within the band:

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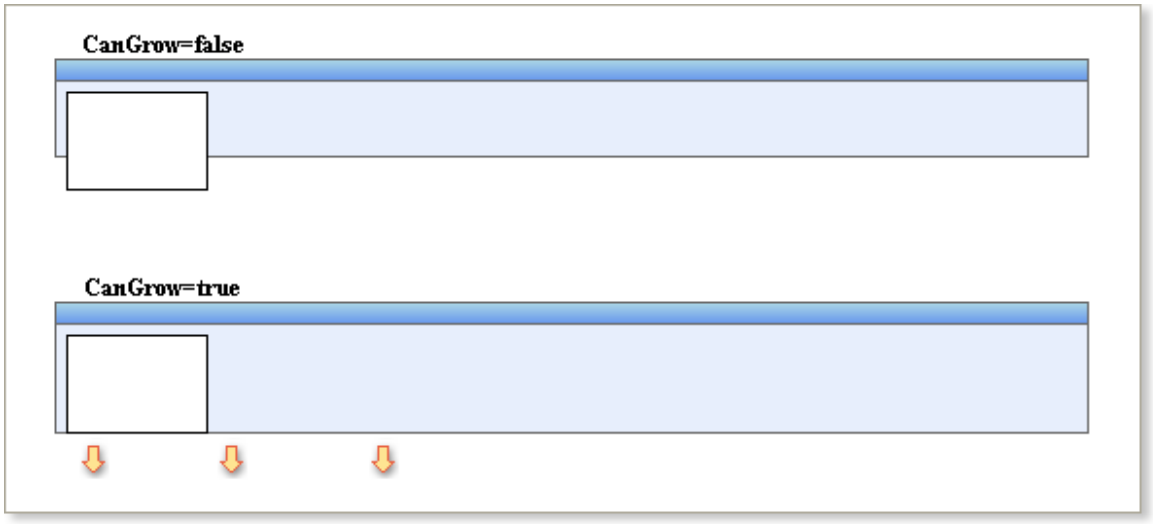


### CanShrink Property

Similarly if there is free space between the boundary of a band and the lower border of the tallest component that it contains and you set the **CanShrink** property to true, the height of the band will automatically be reduced until it matches the lowest point of the lowest contained component:

## 2.9.4. Binding Bottom Border of Component

Typically there will be more than one component on a band, as in the example shown below:

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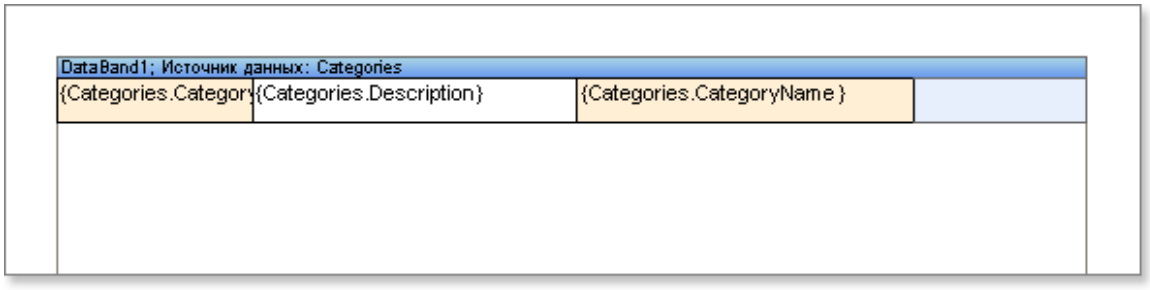
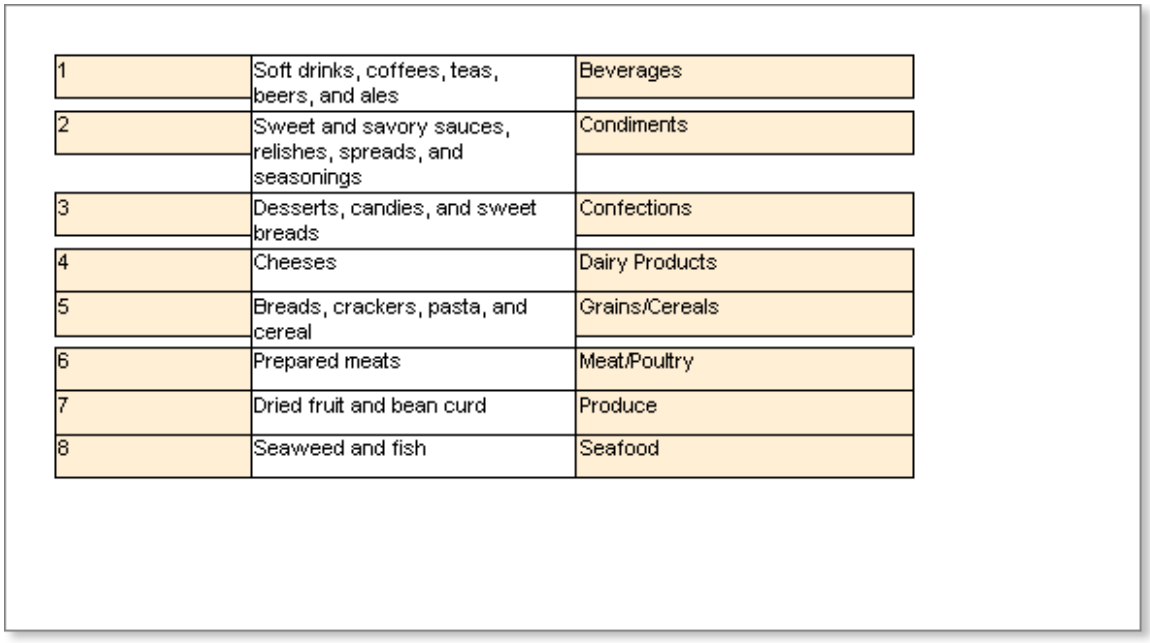



When rendering a report the height of some of the components may be changed automatically to suit the size of their contents which can result in unwanted breaks in the layout as shown below:



| | | |
|---|---|---|
| 1 | Soft drinks, coffees, teas, beers, and ales | Beverages |
| 2 | Sweet and savory sauces, relishes, spreads, and seasonings | Condiments |
| 3 | Desserts, candies, and sweet breads | Confections |
| 4 | Cheeses | Dairy Products |
| 5 | Breads, crackers, pasta, and cereal | Grains/Cereals |
| 6 | Prepared meats | Meat/Poultry |
| 7 | Dried fruit and bean curd | Produce |
| 8 | Seaweed and fish | Seafood |

In order to prevent this occurring you can bind the bottom border of a component to the lower border of the container in which the component is placed. This binding is done using the **GrowToHeight** property.

## GrowToHeight Property

If you set the **GrowToHeight** property to true all components that do not change their size will have their bottom borders bound to the bottom border of the container.

**Note:** The **GrowToHeight** property binds the bottom border of the component to that of its container whether that container is a **Band** or a **Panel** component.

This will give a consistent and much better looking result as shown below:

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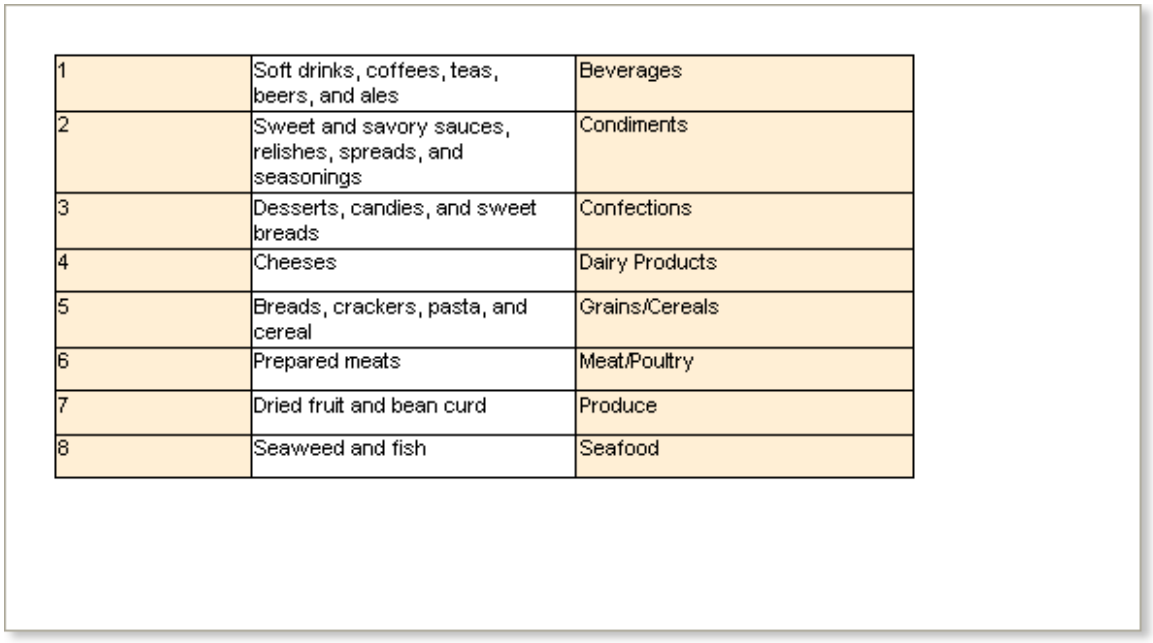

| | | |
|---|---|---|
| 1 | Soft drinks, coffees, teas, beers, and ales | Beverages |
| 2 | Sweet and savory sauces, relishes, spreads, and seasonings | Condiments |
| 3 | Desserts, candies, and sweet breads | Confections |
| 4 | Cheeses | Dairy Products |
| 5 | Breads, crackers, pasta, and cereal | Grains/Cereals |
| 6 | Prepared meats | Meat/Poultry |
| 7 | Dried fruit and bean curd | Produce |
| 8 | Seaweed and fish | Seafood |

By default, the **GrowToHeight** property is set to false.

### Handling Multiple Components

If there are multiple components on one band that can automatically change their size it is possible set the **GrowToHeight** property for all these components to true. This will cause the height of these components to be automatically adjusted based on the height of the tallest component.

**Note:** The **GrowToHeight** property can be set for components which automatically change their size as well as those that do not. In this case, if the bottom border is not matched to the bottom border of its container the size of this component will be automatically adjusted to suit.

## 2.9.5. Automatically Shifting Components

Automatically changing the size of components can lead to a problem when rendering reports - what happens when a change in the size of one component has an adverse effect on another component in the report? For example, if the height of the first component is increased it could overlap a component placed below it.

To prevent this problem the **ShiftMode** property is used.

### ShiftMode Property

The **ShiftMode** property allows all components with top borders situated below the top border of an automatically modified component to be automatically shifted down the report so that they maintain the same relative position.

The property has three flag values each of which can be set to **True** or **False**:

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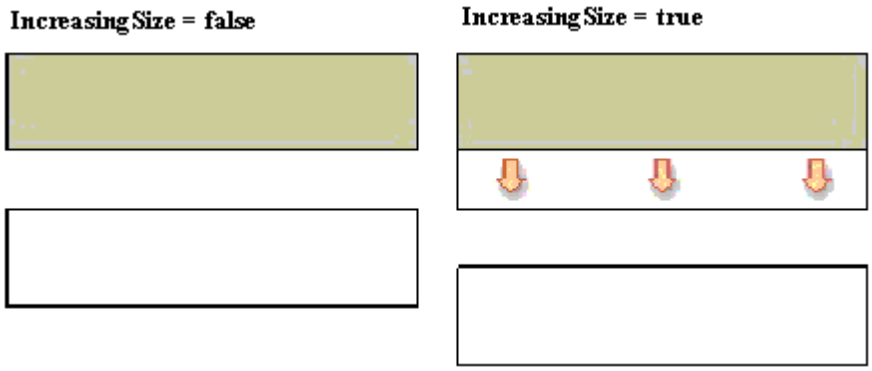
- **IncreasingSize**
- **DecreasingSize**
- **OnlyInWidthOfComponent.**

These work as follows:

## 1. IncreasingSize

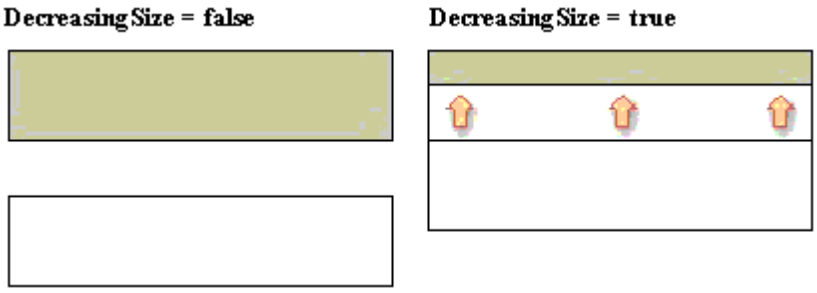
If this flag is set to true then any increase in the height of the components located above the specified component causes the component to shift down vertically by the same amount. If the flag is set to false then any increase in the height of the higher components is simply ignored, as shown in the example below:




By default this flag is set to true.

## 2. DecreasingSize

If this flag is set to true then any decrease the height of the components located above the specified component causes the component to shift up vertically by the same amount. If the flag is set to false then any decrease in the height of the higher components is simply ignored, as shown in the example below:




By default, this flag is set to false.

## 3. OnlyInWidthOfComponent

If the flag is set to true, it takes into account changes only to those components that have their left boundary less than the left border of the specified component, and the right border more than the left border of this component as in the examples below:

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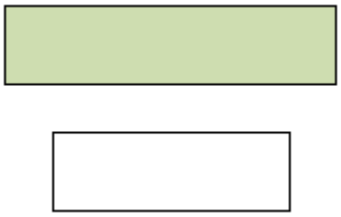
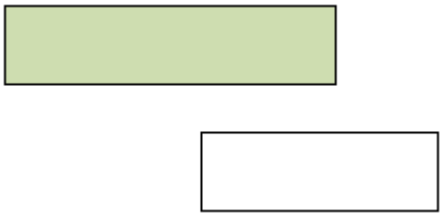
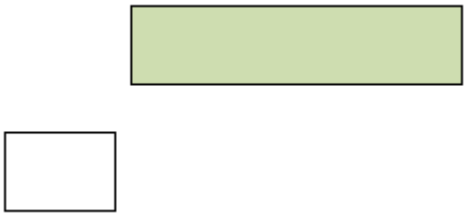


Or:



If this flag is disabled, the location of the left border of this component is ignored. For example:



By default this flag is disabled.

## 2.10. Barcodes

A barcode is an optical machine-readable representation of data typically made up of parallel bars, varying in width, spacing, or height, which are read by barcode readers. In some cases a line of digits can be placed under a barcode which represent in human readable form the data contained in the barcode.

### 1D Barcodes

Most commonly barcodes represent their data in the widths and spacings of printed parallel lines which is why they are called linear or 1D (one-dimensional) barcodes or symbolics. Linear barcodes are read in one direction (horizontally). The following linear barcodes are commonly used:

- EAN
- UPC
- Code39
- Code128
- Codabar

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- Interleaved 2 of 5.

Linear symbolics allow the coding of small amounts of information content (a maximum of 20-30 digits or symbols) and the devices that read them are considered to be simple scanners.

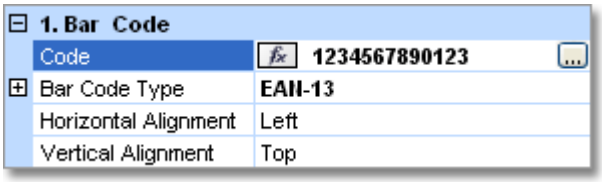
## 2D Barcodes

2D (two-dimensional) barcodes or symbolics are used for coding large amounts of information in a bar code, potentially up to several pages worth. Such a barcode would consist of square cells, dots, hexagons, and other geometrical figures. Special 2D barcode scanners are required to read the barcodes which decode in two dimensions (horizontal and vertical). The following 2D barcodes are the most commoe:

- **PDF417**
- **Datamatrix.**

## Setting Barcode Data

The Code property of the Barcode component is used to specify the code of the bar-code.




This property is an expression so can be defined either as a literal string or a code calculation that can generate the barcode based on the content of a data field or any other calculation that may be applicable. For example, the Code below is set as a string:

```
1234567890123
```

The Code read from a data field:

```
{Items.Code}
```

## Using Barcode Components

When using the Barcode components is it important to remember that changing the sizes of those components within the designer does not lead to a change in the printed or displayed size of the barcodes.

All barcodes have to meet a specified standard or it would not be possible to read their data. In many barcodes changing the size of the code is either not allowed or has some limitations. For this reason the size of a barcode is set using special properties. All these properties can be found in the Properties panel of the barcode. For example, on the picture below the Properties panel of the EAN-128a barcode is shown. This particular barcode allows the user to set the BarcodeHeight and the BarCodeModules.

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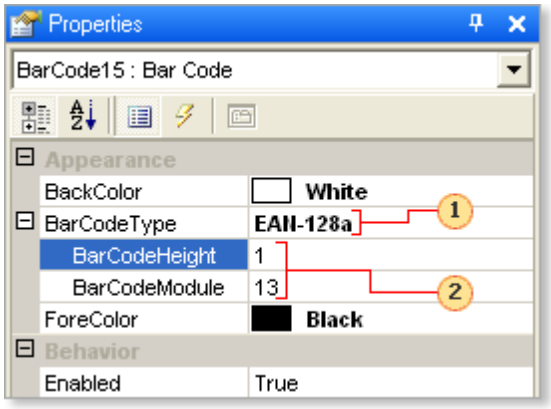


1 The bar-code type
2 The bar-code properties

**Important:**Changing the size of a barcode component does not change the size of the printed barcode. Additional properties are used to change the size and then only on barcode types where changing the size is permitted.

## 2.10.1. Bar-codes Size

Barcode sizes are very important if they are to read successfully by scanners. Each type of barcode is defined using the following size parameters:

### Density
A mil is used to specify the barcode density.

1 mil = 1/1000 inch

### Module
Module parameter ("Module", sometimes referred to as the "X dimension") indicates the narrowest bar of a barcode. This parameter is connected with the printing resolution of a barcode and the barcode density. For example, if the narrowest bar is 10 mils it is said that the barcode is printed with 10 mil resolution or that the density of the barcode is 10 mil.

### Density
There are two elements of density - the graphics density and information density of a barcode.

### Information Density
The information density is the number of characters that can be encoded per inch given a certain X value. The smaller the value of X, the more characters can be encoded in an inch and, thus, the density rises. The information density of a bar-code depends on the character encoding. The less the number of bars and spaces required to encode one symbol the higher the information density of the bar-code.

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### Graphics Density

The graphics density of the barcode is connected with the bar-code size. The classification of graphic linear barcodes is shown in the table below:

-

| Graphics density | Printing resolution |
|---|---|
| Very high density | < 4 mils |
| High density | 4 mils .. 6 mils |
| Medium density | 7 mils .. 13 mils |
| Low density | 14 mils .. 20 mils |
| Very low density | > 20 mils |

### Width

The barcode width depends on the graphic and information density. The density is limited by the resolution of the printer and scanner, but the barcode width depends on the information density of the symbolic. Different symbolics may have different barcode widths even if their graphic density is the same.

### Height

The height of the barcode is needed only to allow scanners to easily read it. Usually the best barcode length is based on the ratio of height to width of around 1:5-6.

### Spaces

This is a very important attribute, especially for linear barcodes. Spacing is the light regions at the start and the end of the bar-code. They are required for the scanner to identify the bar-code measurements.

## 2.10.2. Linear Bar-codes

There are a great many linear barcode specifications available, including many that are based on the EAN/UPC specification.

### 2.10.2.1. EAN/UPC Based

EAN/UPC barcodes are based on the EAN.UCC system which was created in the USA in 1973 by the Uniform Product Code Council company, now known as Uniform Code Council, Inc. (UCC).

### UPC

Initially, UCC developed a 12-digit ID and the **UPC** (Uniform Product Code) barcode. The first **UPC**

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code was scanned in 1974.

## EAN

After successful implementation of the **UPC** system in 1977 the European Article Numbering Association format was created as a superset of the UCC system and uses 13-digit identification numbers but the same data structures as UPC barcodes.

Today global compatibility is reached by using the 14-digit GTIN format. This provides unique identification of goods all over the world.

In this section details of the **UPC-A**, **UPC-E**, **EAN-8**, **EAN-13**, **EAN-128**, **ITF-14** barcodes of "General EAN.UCC Specifications" and based on those the **JAN-8**, **JAN-13**, **ISBN-10**, **ISBN-13** barcodes are displayed.

#### 2.10.2.1.1 What is EAN.UCC System?.

The EAN.UCC system appeared in the USA and was created in 1973 by the Uniform Product Code Council company. Now this company is known as Uniform Code Council, Inc. (UCC). Initially, the UCC was developed 12-digit ID and appropriate the **UPC** bar-code (Uniform Product Code). The first **UPC** code was scanned in 1974. After successful implementation of the **UPC** system in 1977 the European Article Numbering Association was created. The **EAN** system was created as superset of the UCC system and uses the 13-digit identification numbers but the same structures of data as bar-codes. So the EAN.UCC system was extended. Today the complete global compatibility is reached by using the 14-digit GTIN format. This provides unique goods ID all over the world.

In this section **UPC-A**, **UPC-E**, **EAN-8**, **EAN-13**, **EAN-128**, **ITF-14** barcodes of "General EAN.UCC Specifications" and based on them **JAN-8**, **JAN-13**, **ISBN-10**, **ISBN-13** barcodes are viewed.

#### 2.10.2.1.2 UPC-A.

**UPC-A** was the first barcode, created by Uniform Code Council, Inc. in 1973. The **UPC-A** barcode is an unbroken code with a fixed length and high density. It is used for tracking trade items in stores, and otherwise marking goods.

| | |
|---|---|
| **Valid symbols:** | 0123456789 |
| **Length:** | fixed, 12 characters |
| **Check digit:** | one, modulo-10 algorithm |

**UPC-A** barcodes consist of 11 data digits and one check digit. The first digit is a number system digit that normally represents the type of product being identified. The following 5 digits are a manufacturers code and the next 5 digits are used to identify a specific product.

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The barcode contains the following elements:

- 1 digit - system number
- 5 digits - manufacturer code
- 5 digits - product code
- 1 digit - check digit

The barcode does not contain any information about characteristics of a product, but only a unique number relating to an entry in the International data base where all information about the particular product is stored. An example barcode in **UPC-A** format:

**UPC-A Barcode**

Note the 'human readable' digits at the foot which can be used by operators if the label becomes damaged or will not scan for some reason - "123456789012" is the number encoded in the barcode.

#### 2.10.2.1.3 UPC-E.

A **UPC-E** is a smaller seven digit UPC symbology for number system 0. For **UPC-E** barcodes, normally 6 digits are specified and the barcode calculates the seventh check digit.

| | |
|---|---|
| **Valid symbols:** | 0123456789 |
| **Length:** | fixed, 8 characters |
| **Check digit:** | one, modulo-10 algorithm |

Before the Middle guard bars, a binary 1 is indicated by a bar, while a 0 is indicated by a space. After the Middle guard bars, however, the patterns are optically inverted. In other words, a 1 is now indicated by a space, and a 0 is now indicated by a bar. It has the same basic structure as the **UPC-A** barcode.

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**A "UPC-E" barcode.**

Note the 'human readable' digits at the foot which can be used by operators if the label becomes damaged or will not scan for some reason - "1234567" is the number encoded in the barcode.

#### 2.10.2.1.4 EAN-13.

The **EAN-13** barcode was created based on the UPC-A barcode as an extension of the EAN.UCC system used outside the USA. EAN-13 is the European version of UPC-A.

| | |
|---|---|
| **Valid symbols:** | 0123456789 |
| **Length:** | fixed, 13 characters |
| **Check digit:** | one, modulo-10 algorithm |

The structure of EAN-13 barcode is the same as UPC-A. Each bar-code character consist of 2 bars and 2 spaces, which may have a width from 1 to 4 modules. The first digit is always placed outside the symbol, additionally the right quiet zone indicator (>) is used to indicate the Quiet Zones that are necessary for barcode scanners to work properly.

The bar-code contains the following elements:

- 2 (3) digits - country code
- 5 (4) digits - manufacturer code
- 5 digits - product code
- 1 digit - check digit

The barcode does not contain any information about characteristics of a product, but only a unique number relating to an entry in the International data base where all information about the particular product is stored. An example barcode in EAN-13 format:

**An "EAN-13" barcode.**

Note the 'human readable' digits at the foot which can be used by operators if the label becomes damaged or will not scan for some reason - "123456789012" is the number encoded in the barcode.

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#### 2.10.2.1.5 EAN-8.

The **EAN-8** bar-code was developed for use on small packages. It is used instead of the EAN-13 bar-code where an EAN-13 barcode would be too large, for example on packets of gum.

| | |
|---|---|
| **Valid symbols:** | 0123456789 |
| **Length:** | fixed, 8 characters |
| **Check digit:** | one, modulo-10 algorithm |

The structure of the **EAN-8** bar-code is in the same as the structure of the **EAN-13** bar-code. The check digit is calculated automatically irrespective of input data.

The bar-code contains the following elements:

- 3 digits - a prefix of the national organization
- 4 digits - product code
- 1 digit - check digit

This bar-code does not contain the code of the producer and has only 4 digits. As a result there can only be 10000 specimen products per organization, so the **EAN-8** bar-code is provided only to those organizations which really need it.

**An "EAN-8" barcode.**

Note the 'human readable' digits at the foot which can be used by operators if the label becomes damaged or will not scan for some reason - "12345670" is the number encoded in the barcode.

#### 2.10.2.1.6 Add-On Symbols.

**Add-on Symbols** (barcodes) can be used in some applications together with the EAN-13, UPC-A, and UPC-E bar-codes. Add-on Symbols may contain 2 or 5 additional digits and are usually placed to the right of the barcode.

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| | |
|---|---|
| **Valid symbols:** | 0123456789 |
| **Length:** | fixed, 2 or 5 characters |
| **Check digit:** | no |

**The "UPC-E" bar-code with the "02" Add-On Symbols**

**The "EAN-13" bar-code with the "00321" Add-on Symbols**

#### 2.10.2.1.7 EAN-128.

The **EAN-128** bar-code is a subset of the Code128 barcode which uses a variable length, high density, alphanumeric symbology. It allows the output of 128 characters of ASCII and is effective for digits. There are actually four subcodes, which can be mixed within a single barcode: **EAN-128a**, **EAN-128b**, **EAN-128c**, and **EAN-128auto** (will automatically switch between code sets to encode the ASCII values).

| | |
|---|---|
| **Valid symbols:** | EAN128a: ASCII character 0 to 95<br>EAN128b: ASCII character 32 to 127<br>EAN128c: pairs of digits from 00 to 99 |
| **Length:** | Variable |
| **Check digit:** | one, modulo-103 algorithm |

The structure of the **EAN-128** bar-code is the same as for the **Code128** bar-code. Elements of the

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bar-code consist of three bars and three spaces. Bars and spaces have module construction and their width consists of either one or four modules. The width of an element consists of eleven modules.

To difference between the **EAN-128** bar-code and the **Code128** bar-code is that the FNC1 is placed after the start character. This character is reserved for the EAN.UCC system.

**An "EAN-128c" barcode.**

Note the 'human readable' digits at the foot which can be used by operators if the label becomes damaged or will not scan for some reason - "0123456789012345" is the number encoded in the barcode.

#### 2.10.2.1.8 ITF-14.

The **ITF-14** bar-code was developed to encode a Global Trade Item Number. The ITF bar-code has the nominal size of (152*44mm) and low requirements to the printing surface. Therefore, it can be printed not only on a label but directly onto a packing carton.

| | |
|---|---|
| **Valid symbols:** | 0123456789 |
| **Length:** | fixed, 14 characters |
| **Check digit:** | one, modulo-10 algorithm |

Each character is encoded using two broad and three narrow bars/spaces. The ITF-14 will always encode 14 digits.

The bar-code contains the following elements:

- 1 digit - logic
- 3 digits - Global Trade prefix
- 6 digits - Producer code
- 3 digits - Product code
- 1 digit - Check digit

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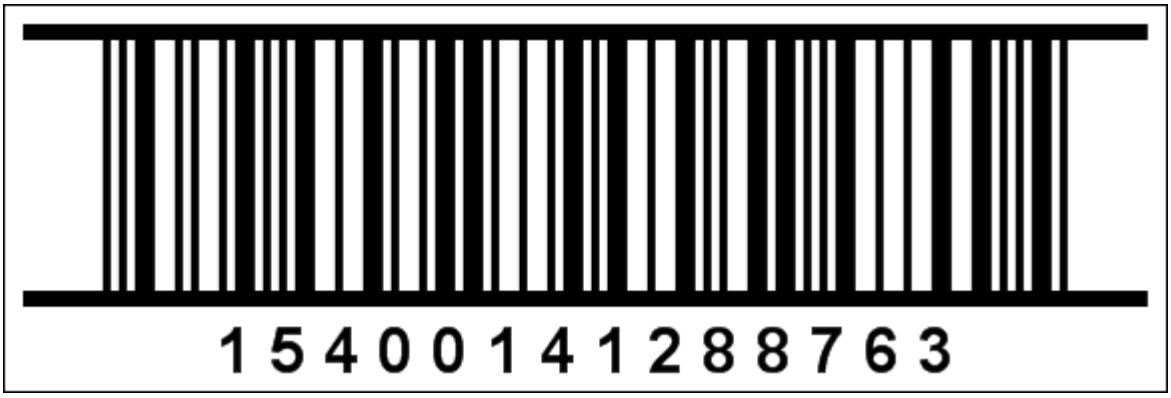


**An "ITF-14" barcode.**

Note the 'human readable' digits at the foot which can be used by operators if the label becomes damaged or will not scan for some reason - "15400141288763" is the number encoded in the barcode.

#### 2.10.2.1.9 JAN-13.

A **JAN-13** barcode is another name for an EAN-13 barcode dedicated for use only in Japan. The first two digits should be 45 or 49 which indicate Japan.

**A "JAN-13" barcode.**

Note the 'human readable' digits at the foot which can be used by operators if the label becomes damaged or will not scan for some reason - "4901234567894" is the number encoded in the barcode.

#### 2.10.2.1.10 JAN-8.

A **JAN-8** barcode is another name for an EAN-8 barcode dedicated for use only in Japan. The first two digits of the barcode should be 45 or 49 to indicate Japan.

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**A "JAN-8" barcode.**

Note the 'human readable' digits at the foot which can be used by operators if the label becomes damaged or will not scan for some reason - "49123456" is a number encoded in the barcode.

#### 2.10.2.1.11 ISBN-10.

**ISBN** is the abbreviation of International Standard Book Number - a unique, numeric commercial book identifier. Based upon the 9-digit Standard Book Numbering (SBN) code introduced in 1966, 10-digit **ISBN** format was developed in 1970 and became the international standard.

| | |
|---|---|
| **Valid symbols:** | 0123456789 |
| **Length:** | Not variable, 10 symbols |
| **Check digit:** | One |

The **ISBN**, assigned to books of 2006 contained 10 digits length and consist of four fields of variable length:

- For a 13 digit ISBN, a GS1 prefix: 978 or 979;
- The group identifier, (language-sharing country group);
- The publisher code;
- The item number;
- A checksum character or check digit.

**An "ISBN-10" barcode.**

Note the 'human readable' digits at the foot which can be used by operators if the label becomes damaged or will not scan for some reason - "80-902734-1-6" is the number encoded in the barcode.

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#### 2.10.2.1.12 ISBN-13.

**ISBN** is the abbreviation of International Standard Book Number - a unique, numeric commercial book identifier. The ISBN-13 specification was Issued from January 2007, and describes how the 13-digit **ISBN** check digit is calculated.

| | |
|---|---|
| **Valid symbols:** | 0123456789 |
| **Length:** | fixed, 13 symbols |
| **Check digit:** | one, algorithm modulo-10 |

The **ISBN** assigned to books after 2006 contained 13 digits length and consist of four fields of variable length:

- prefix: 978 or 979;
- The group identifier, (language-sharing country group);
- The publisher code;
- The item number;
- A checksum character or check digit.

**A "ISBN-13" barcode.**

Note the 'human readable' digits at the foot which can be used by operators if the label becomes damaged or will not scan for some reason - "978-0-306-40615-7" is a number encoded in the barcode.

### 2.10.2.2. Other Barcodes

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#### 2.10.2.2.1 Pharmacode.

A **Pharmacode** barcode is used in the pharmaceutical industry as a packing control system. The Pharmacode barcode is placed on the package.

| | |
|---|---|
| **Valid symbols:** | A whole number from 3 to 131070 |
| **Length:** | Variable, 1..6 characters of a digit |
| **Check digit:** | No |

A **Pharmacode** barcode can represent only a single integer from 3 to 131070. All digits in the specified range make correct barcodes, but some of these barcodes can be unreadable because all barcodes are identical. So, the following digits should not be used:

3, 6, 7, 14, 15, 30, 31, 62, 63, 126, 127, 254, 255, 510, 511, 1022, 1023, 2046, 2047, 4094, 4095, 8190, 8191, 16382, 16383, 32766, 32767, 65534, 65535, and 131070.

**A "Pharmacode" barcode. "12345" is a number encoded in the barcode.**

#### 2.10.2.2.2 Plessey.

A **Plessey** barcode was created by **Plessey** company in England on March 1971. The Plessey barcode is widely used in libraries, supermarkets, and production environments. A variant of the barcode known as Anker Code and appropriate scanners were provided by the ADS company.

Encoding technology of the **Plessey** barcode was used by MSE Data Corporation. This company used it to create an MSI barcode that sometimes is called 'modified Plessey'.

This bar-code is now obsolete and new scanners cannot read it.

| | |
|---|---|
| **Valid symbols:** | 0123456789ABCDEF |
| **Length:** | Variable |
| **Check digit:** | No, one or two;<br>Algorithm modulo-10 or modulo-11 |

**Plessey** is a variable length, numeric-only symbology. It allows to output digits 0..9 and letters A, B, C, D, E, F but more frequently only digits are used. Check digits calculated using the modulo-10 or modulo-11 algorithm can be used.

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Each character of the bar-code consist of 4 elements. An element consists of a bar and a space and has 3 modules width. If the element is the binary 0 then the bar-code has 1 module width and a space has 2 modules. If the element is the binary 1 the the bar has 2 module width and a space has 1 module. So, each character has 12 modules length. Therefore, this bar-code has very low data density.

**A "Plessey" barcode. "1234567890" is a number encoded in the barcode.**

#### 2.10.2.2.3 Msi.

The **Msi** bar-code developed by the MSI Data Corporation. It is based on the original Plessey symbology. Sometimes the **Msi** bar-code is called the **Modified Plessey**. The basic implementation of the **Msi** bar-code is used for warehouse shelves and inventory.

| | |
|---|---|
| **Valid symbols:** | 0123456789 |
| **Length:** | Variable |
| **Check digit:** | none, one or two;<br>algorithm modulo-10 or modulo-11 |

**Msi** is a variable length, numeric-only symbology and allows to output digits 0..9. One or two check digits calculated by **modulo-10** or **modulo-11** can be used. Each character of the bar-code consist of 4 elements. If the element is the binary 0 then the bar-code has the 1 module width and a space has 2 modules. If the element is the binary 1 the the bar the 2 module width and a space has 1 modules. So, each character has 12 modules length. Therefore, this bar-code has very low data density.

**A "Msi" barcode. "1234567890" is a number encoded in the barcode.**

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#### 2.10.2.2.4 2of5.

The **2of5** bar-code was developed 40 years ago. This is a low density variable length numeric. This barcode is used in manufacture and is known as Code 25, Code 25 Standard or Code 25 Industrial. It is very seldom used these days.

| | |
|---|---|
| **Valid symbols:** | 0123456789 |
| **Length:** | Variable |
| **Check digit:** | no |

**A "2of5 Standard" barcode. "1234567890" is a number encoded in the barcode.**

The **2of5 Interleaved** barcode is a high density variable length numeric only symbology that encodes digit pairs in an interleaved manner. This bar-code is developed of the Code 25 Standard. It is usually used in the industrial.

| | |
|---|---|
| **Valid symbols:** | 0123456789 |
| **Length:** | Variable, even |
| **Check digit:** | No |

**A "2of5 Interleaved" barcode. "1234567890" is a number encoded in the barcode.**

#### 2.10.2.2.5 FIM.

Facing Identification Mark (FIM) is the type of postal bar code used in automated mail processing by the U.S. Postal Service. FIM is a set of vertical bars. FIM patterns are placed in the upper right corner along the top edge and two inches in from the right edge of letters and cards.

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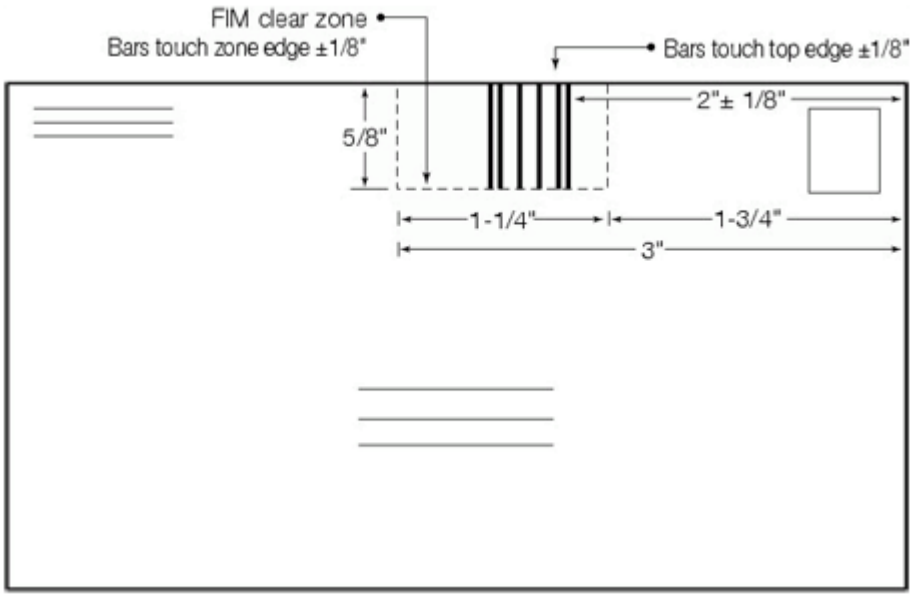



**The FIM bar-code on a card**

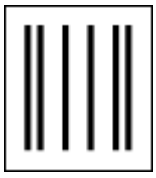
The table below shows basic parameters of the **FIM** bar-code.

| | |
|---|---|
| **Valid symbols:** | ABCD |
| **Length:** | Fixed, 1 symbol |
| **Check digit:** | No |

The **FIM** bar-code consists of nine elements. Each element can be 1 (vertical bar) or 0 (space). Four bar-codes are used:

FIM A: 110010011
FIM B: 101101101
FIM C: 110101011
FIM D: 111010111

So the data row should contain 1 of 4 available characters: A, B, C, D.



**A "FIM C" barcode**

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#### 2.10.2.2.6 Codabar.

The **Codabar** is a linear barcode symbology developed in 1972. It can be called as NW-7, USD-4, Code 2 of 7 (2 values of a bar length, 7 elements). It is frequently used in medicine (for example, blood bank forms).

| | |
|---|---|
| **Valid symbols:** | 0123456789 - $ : / . +<br>ABCD (only as start/stop symbols) |
| **Length:** | Variable |
| **Check digit:** | no |

Two bars and three spaces are used for encoding. The bar-code has four different sets of start/stop characters: A, B, C, D. These characters are used only as start/stop characters and should not be appeared in the bar-code.

**A "Codabar" barcode. "A12345678A" is a number encoded in the barcode.**

#### 2.10.2.2.7 Postnet.

The POSTNET (POSTal Numeric Encoding Technique) bar-code was developed by the United States Postal Service for encoding ZIP-codes and correct sorting using BCSs. It can encode ZIP, ZIP+4, and ZIP+4+2 postal codes.

| | |
|---|---|
| **Valid symbols:** | 0123456789 |
| **Length:** | Fixed, 5, 9 or 11 characters |
| **Check digit:** | One, algorithm modulo-10 |

The Postnet bar-code can encode 0-9 digits. The bar-code consist of short and long bars. Each symbol of data is encoded using five bars. This bar-code contains only one check symbol, that is calculated by the modulo-10 algorithm.

**A "Postnet" barcode. "11387975204" is a number encoded in the barcode.**

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#### 2.10.2.2.8 Australia Post 4-state.

The **Australia Post 4-Stage** bar-code is used in Australia for the purposes of sorting and directing mail.

| | |
|---|---|
| **Valid symbols:** | 0123456789 |
| **Length:** | FCC - fixed, 2 characters,<br>DPID - fixed, 8 characters,<br>CustomerInfo variable |
| **Check digit:** | Four, ReedSolomon algorithm |

The barcode consists of 4 elements (4 conditions), each has its own name, value. Each element consists of two bars and two spaces. Each barcode contains 4 check symbols, calculated by the ReedSolomon algorithm. The value of these symbols are usually printed after the text of the barcode.

The string may contain the following parts:

- FCC ("Format Control Code"), 2 digits. May have the following values 11, 45, 87, 92, 59, 62, 44.
- DPID ("Delivery Point Identifier" or "Sorting Code"), 8 digits.
- CustomerInfo may contain 0-9, A-Z, a-z, # symbols and space. The maximal length depends on FCC:

Notes:

If FCC = 11, 45, 87, 92 then the CustomerInfo in ignored.
If FCC = 59 then the CustomerInfo may contain 8 digits or 5 letters/digits.
If FCC = 62, 44 then the CustomerInfo may contain 15 digits or 10 letters/digits.

**A "Australia Post 4-state" barcode. "1138797520" is a number encoded in the barcode.**

#### 2.10.2.2.9 Royal TPG Post KIX 4-State.

This symbology is used by Royal Dutch TPG Post (Netherlands) for Postal code and automatic mail sorting. It provides information about the address of the receiver. This symbology encodes alpha-numeric characters (0-9, A-Z). The barcode is also known as Royal TNT Post Kix, Dutch KIX 4-State

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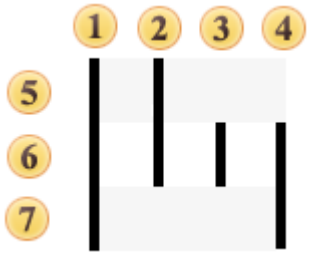
Barcode, Kix Barcode, TPG KIX, Klantenindex Barcode, TPGPOST KIX.

| | |
|---|---|
| **Valid symbols:** | 0123456789<br>ABCDEFGHIJKLMNOPQRSTUVWXYZ |
| **Length:** | Variable |
| **Check digit:** | none |

The barcode consists of four types of bars. The Barcode structure is shown in the picture below:




1. Full bar;
2. Ascender;
3. Tracker;
4. Descender;
5. Ascending Region;
6. Tracking Region;
7. Descending Region.

**A Royal TPG Post KIX 4-State Barcode. "1234567890123" is a number encoded in the barcode.**

### 2.10.2.2.10 Royal Mail 4-state.

The **Royal Mail 4-state** is a barcode symbology for use in automated mail sort process. There are 38 valid characters in the entire character set:

| | |
|---|---|
| **Valid symbols:** | numeric characters 0-9;<br>alpha characters A-Z |
| **Length:** | Variable |
| **Check digit:** | none |

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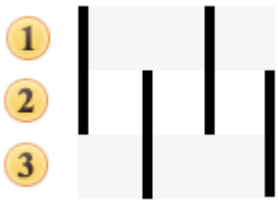
A barcode consists of four bars, of which two are ascenders and two descenders. The tracking region is present in all bars.




1 Ascending Region;
2 Tracking Region;
3 Descending Region.

**A Royal Mail 4-state Barcode. "1234567890123" is a number encoded in the barcode.**

#### 2.10.2.2.11 Code11.

The **Code 11** bar-code weas developed by **Intermec** in 1977. It is used in telecommunications.

| | |
|---|---|
| **Valid symbols:** | 0123456789 - |
| **Length:** | Variable |
| **Check digit:** | None, one or two; modulo-10 algorithm |

This barcode has high density and can encode any length string consisting of the digits 0-9 and the dash character. The **Code 11** uses one or two check digits and two check symbols. Usually, if the length of the string is less than 10 symbols then only one check symbol is used. If the the length of the string is 10 symbols and more then 2 check symbols are used. The value of the check symbol is calculated by the modulo-10 algorithm.

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**A "Code 11" barcode. "12345-6789" is a number encoded in the barcode.**

### 2.10.2.2.12 Code39.

Code 39 is a variable length symbology that can encode 44 characters. Code 39 is the most popular symbology in the non-retail world and is used extensively in manufacturing, military, and medicine applications.

| | |
|---|---|
| **Valid symbols:** | 0123456789<br>ABCDEFGHIJKLMNOPQRSTUVWXYZ<br>-.$/+% space |
| **Length:** | Variable |
| **Check digit:** | No, according to the specification;<br>In practice - one, modulo-43 algorithm |

Each Code 39 bar code has a start/stop character represented by an asterisk (*).The bar-code code does not contain the check character but can be added programmatically. Each character starts with a 'dark bar' that consists of 5 dark and 4 blank bars. The ratio between narrow and wide bars may range from 2.2:1 to 3:1.

The Code 39 barcode has low data density. It requires more free space than Code 128, but the Code 39 barcode can be identified by any barcode scanner.

**A "Code 39" barcode. "ABC-123" is a number encoded in the barcode.**

**Code 39 extended** is the version of the **Code 39** bar-code which also supports the ASCII set of characters. The 0-9, A-Z, "." and "-" characters are encoded the same as of the **Code 39** bar-code.

**A "Code 39 extended" barcode. "Abc+" is a number encoded in the barcode.**

**Note:** Barcode scanners cannot differentiate between the **Code 39** and **Code 39 extended** barcodes. It is necessary to select the correct barcode either by setting a property on the scanner or

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programmatically.

#### 2.10.2.2.13 Code93.

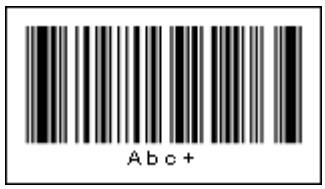
The **Code 93** is a variable length symbology that can encode the complete 128 ASCII character set. This barcode was developed as an enhanced version of the Code 39 barcode. It has a higher density than either the Code 39 or the Code 128 bar-code.

| | |
|---|---|
| **Valid symbols:** | 0123456789<br>ABCDEFGHIJKLMNOPQRSTUVWXYZ<br>-.$/+% space |
| **Length:** | Variable |
| **Check digit:** | Two, algorithm modulo-47 |

The Code 93 barcode may encode Latin letters (from A to Z), digits (from 0 to 9) and a group of special characters. The barcode always contains two check characters. Each characters consist of nine modules which are joined in 3 groups. Each group has one black bar and one white bar.

**A "Code 93" barcode. "ABC-123" is a number encoded in the barcode.**

**Code 93 extended** is a version of the **Code 93** barcode that supports a set of ASCII characters. All additional symbols are encoded as a sequence of two **Code 93** characters. The first character is always one of four special characters. Therefore, scanners can always identify the different versions of the bar-code.




**A "Code 93 extended" barcode. "Abc+" is a number encoded in the barcode.**

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#### 2.10.2.2.14 Code128.

The **Code128** barcode was developed in 1981. It is a variable length, high density, alphanumeric symbology. It allows the output of 128 characters of ASCII and is effective for digits. There are actually four subcodes, which can be mixed within a single barcode: **Code128a**, **Code128b**, **Code128c**, and **Code128auto** (will automatically switch between code sets to encode the ASCII values).

| | |
|---|---|
| **Valid symbols:** | Code128a: ASCII character 0 to 95<br>Code128b: ASCII character 32 to 127<br>Code128c: pairs of digits from 00 to 99 |
| **Length:** | Variable |
| **Check digit:** | One, algorithm modulo-103 |

The barcode consist of three bars and three spaces. Bars and spaces have module construction and their width consist of one or four modules. The width of an element consist of eleven modules. The "Stop" sign consist of 13 modules and has four bars and three spaces. The check sum is calculated automatically.

**A "Code128c" barcode. "0123456789012345" is a number encoded in the barcode.**

### 2.10.2.3. 2D barcodes parameters

The table below shows the list of linear bar-codes supported by Stimulsoft Reports.

-

| Type | Length | Check symbols | Checksum algorithm | 0-9 | A-Z | a-z | other symbols |
|---|---|---|---|---|---|---|---|
| UPC-A | 12 | 1 | modulo-10 | + | | | |
| UPC-E | 8 | 1 | modulo-10 | + | | | |
| EAN-13 | 13 | 1 | modulo-10 | + | | | |
| EAN-8 | 8 | 1 | modulo-10 | + | | | |
| EAN-128a | var | 1 | modulo-103 | + | + | ASCII 0 to 95 | |

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| | | | | | | | |
|---|---|---|---|---|---|---|---|
| EAN-128b | var | 1 | modulo-103 | + | + | + | ASCII 32 to 127 |
| EAN-128c | var | 1 | modulo-103 | + | | | |
| ITF-14 | 14 | 1 | modulo-10 | + | | | |
| JAN-13 | 13 | 1 | modulo-10 | + | | | |
| JAN-8 | 8 | 1 | modulo-10 | + | | | |
| ISBN-10 | 10 | 1 | modulo-10 | + | | | |
| ISBN-13 | 13 | 1 | modulo-10 | + | | | |
| Pharmacode | 1..6 | - | - | int 3..131070 | | | |
| Plessey | var | 0-2 | modulo-10/11 | + | A B C D E F | | |
| Msi | var | 0-2 | modulo-10/11 | + | | | |
| 2of5 Standard | var | - | - | + | | | |
| 2of5 Interleaved | var | - | - | + | | | |
| FIM | 1 | - | - | A B C D | | | |
| Codabar | var | - | - | + | - $ : / . + | | |
| Postnet | 5, 9, 11 | 1 | modulo-10 | + | | | |
| Australia Post | 10 [+var] | 4 | ReedSolomon | + | | | |
| Code 11 | var | 0-2, A | modulo-11 | + | - | | |
| Code 39 | var | 0-1 | modulo-43 | + | + | - . $ / + % space | |
| Code 39 ext | var | 0-1 | modulo-43 | + | + | + | full ASCII |
| Code 93 | var | 2 | modulo-47 | + | + | -.$/+% space | |
| Code 93 ext | var | 2 | modulo-47 | + | + | + | full ASCII |
| Code128a | var | 1 | modulo-103 | + | + | ASCII 0 to 95 | |
| Code128b | var | 1 | modulo-103 | + | + | + | ASCII 32 to 127 |
| Code128c | var | 1 | modulo-103 | + | | | |

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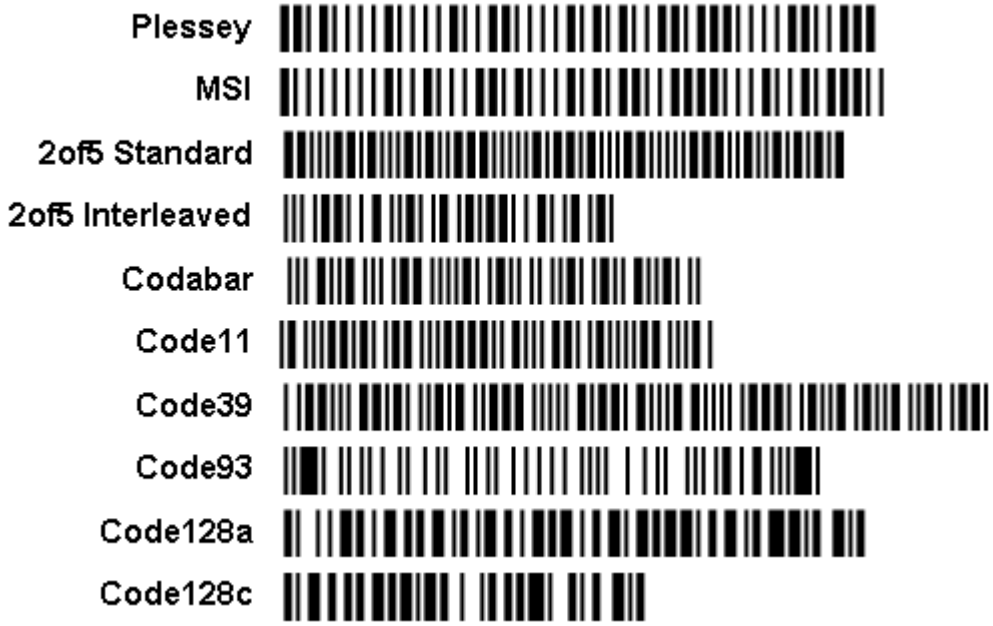
Explanation:

- "Length" - is the data length, it is the number of characters, which can the bar-code can encode; "var" means the variable length.
- "Check symbols" - possible number of check digits; "A" means that number of check digits can be chosen automatically.
- "Checksum algorithm" - the algorithm for calculating check digits.
- "0-9", "A-Z", "a-z" - ranges of symbols; + means that the bar-code can encode characters of this range.
- "other symbols" - other symbols which the bar-code can encode.

**Barcode Sizes**

Below is a comparison of bar-codes of variable length, which can encode the numbers 0 to 9. All bar-codes have the same input data - the row has "ABCDEFGHIJK", and the same module 20, other parameters set by default.




**Coding English Uppercase Letters**

Below is a comparison of the barcodes of variable length which can encode uppercase English letters. All barcodes have the same input data - the row has "ABCDEFGHIJK", and the same module 20, other parameters set by default.

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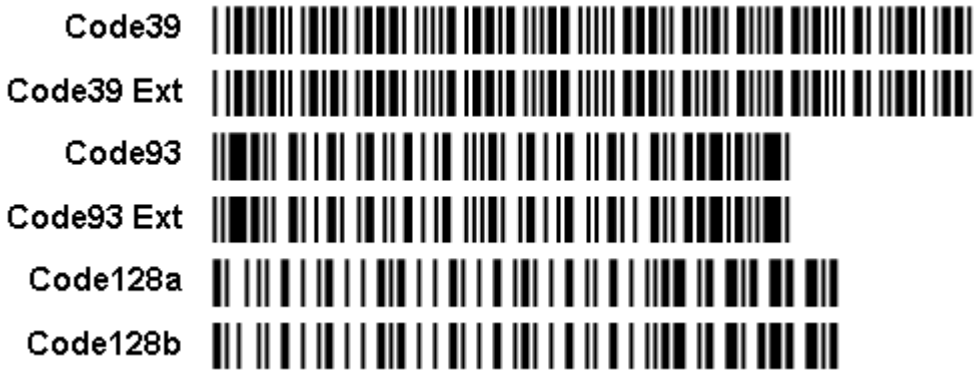
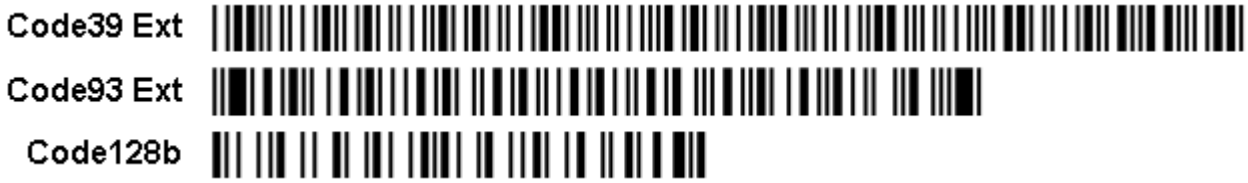



**Coding English lowercase letters**

Below is a comparison of the barcodes of variable length, which can encode lowercase English letters. All bar-codes have the same input data - the row has "abcdefghijk", and the same module 20, other parameters set by default.




## 2.10.3. 2D Barcodes

A matrix code, also known as a 2D barcode or simply a 2D code, is a two-dimensional way of representing information. It is similar to a linear (1-dimensional) barcode, but has more data representation capability.

Today a lot different symbolics of 2D bar-codes are available. Stimulsoft Reports supports the two most popular bar-codes: **PDF417** and **Datamatrix**.

### 2.10.3.1. PDF417

The **PDF417** barcode was developed by Symbol Technologies in 1991. The name of the barcode consist of 2 parts. The PDF comes from Portable Data File. The 417 comes from the structure of the bar-code: each bar-code character consists of 17 modules, each of which consists of 4 bars and 1 space.

PDF417 is a high density 2 dimensional bar code symbology that consists of a stacked set of smaller bar codes. Any ASCII characters can be encoded in this bar-code. The length of data depends on the encoding mode and can reach 1100 bytes, or 1800 text characters, or 2600 digits.

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The bar-code contains from 3 to 90 rows each of which is like a small linear bar code. Each row has:

- A quiet zone.
- A start pattern which identifies the type of symbol as PDF417.
- A "row left" codeword containing information about the row.
- A "row right" codeword with more information about the row.
- A stop pattern.
- A quiet zone.

The bar-code may have any number of rows and columns (patterns in the data row), although the total number of patterns should not be greater then 928. The number of rows and columns can be set using the "DataRows" and "DataColumns" properties. If the "AutoDataRows" and "AutoDataColumns" properties are set to false, then the bar-code size will be fixed. If one of these properties is set to true, then the bar-code size can increased and decreased in this direction depending on data. If both of these properties are set to true, then the size of the bar-code is set automatically, considering the "AspectRatio" parameters (the ratio of the bar-code width to the bar-code height) and "RatioY" (the height of the code word in modules, from 2 to 5).

It is possible to select one of three modes of data encoding depending on the type of encoded information. Each mode allows encoding has its own set of characters and its own rate of compression.

-

| Encoding mode | Valid symbols | Compression |
|---|---|---|
| Byte | ASCII 0 to 255 | 1,2 bytes per word |
| Text | ASCII 9,10,13 & 32-127 | 2 characters per word |
| Numeric | 0123456789 | 2,9 digits per word |

The bar-code contains levels of error corrections: even if the bar-code is damaged, it will be read. There are 9 levels of error corrections shown in the table below:.

-

| Level of error correction | Number of codewords |
|---|---|
| 0 | 2 |
| 1 | 4 |
| 2 | 8 |
| 3 | 16 |
| 4 | 32 |
| 5 | 64 |
| 6 | 128 |
| 7 | 256 |

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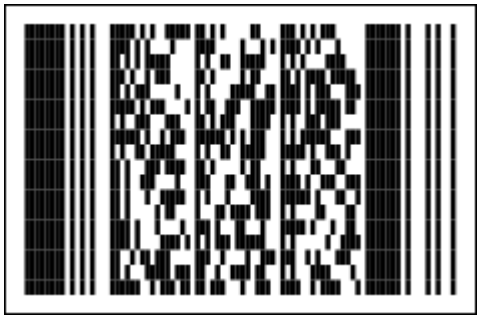
| | |
|---|---|
| 8 | 512 |

To set the level of correction the ErrorsCorrectionLevel property can be used. This property can be set to "Auto", in which case the level will be set automatically.



**A "PDF417" barcode.**

### 2.10.3.2. Datamatrix

The **DataMatrix** barcode was created by the CiMatrix company. Every DataMatrix is composed of two solid adjacent borders in an "L" shape (called the "finder pattern") and two other borders consisting of alternating dark and light "cells" or modules (called the "timing pattern"). Symbol sizes vary from 8×8 to 144×144. The **DataMatrix** is used to mark small products.

Data Matrix symbols are rectangular in shape and usually square, they are made of cells: little elements that represent individual bits.

The bar-code contains error correction codes so the bar-code can be read even if it is partially damaged. There are two main versions of this barcode: the first version is called ECC-000 or ECC-140. The second version is described as ECC-200 version, and uses the Reed-Solomon method for error correction. In Stimulsoft Reports the second version of this bar-code is used.

The bar-code consist of black and white square elements, which are joined into square or rectangular regions. Symbol sizes vary from 8×8 to 144×144. All available combinations of sizes is shown on the table below:

-

| Bar-code size | Length, bites | Bar-code size | Length, bites |
|---|---|---|---|
| 10 × 10 | 3 | 32 × 32 | 62 |
| 12 × 12 | 5 | 36 × 36 | 86 |
| 8 × 18 | 5 | 40 × 40 | 114 |
| 14 × 14 | 8 | 44 × 44 | 144 |
| 8 × 32 | 10 | 48 × 48 | 174 |

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| | | | |
|---|---|---|---|
| 16 × 16 | 12 | 52 × 52 | 204 |
| 12 × 26 | 16 | 64 × 64 | 280 |
| 18 × 18 | 18 | 72 × 72 | 368 |
| 20 × 20 | 22 | 80 × 80 | 456 |
| 12 × 36 | 22 | 88 × 88 | 576 |
| 22 × 22 | 30 | 96 × 96 | 696 |
| 16 × 36 | 32 | 104 × 104 | 816 |
| 24 × 24 | 36 | 120 × 120 | 1050 |
| 26 × 26 | 44 | 132 × 132 | 1304 |
| 16 × 48 | 49 | 144 × 144 | 1558 |

The bar-code size can be set using the **MatrixSize** property. If this property is used to specify the specific size of the bar-code, then the barcode will be of that fixed size. If this property is set to **Automatic** (the default), then the minimal size that is necessary to encode the data will be selected from the list. There are 6 types of the bar-code. If it is required to get a square bar-code in the **Automatic** mode, then the **UseRectangularSymbols** property should be set to **false** (the default). If the property is set to true, then square and rectangular forms are used.

There are several modes of data encoding. Which is used depends on the type of the encoded information. Each mode allows encoding their own set of characters and their own rate of compression.

-

| Encoding mode | Valid symbols | Bits per symbol |
|---|---|---|
| ASCII | ASCII character 0 to 127<br>ASCII character 128 to 255<br>ASCII numeric | 8<br>16<br>4 |
| C40 | Upper-case alphanumeric<br>Lower-case letters and punctuation | 5,33<br>10,66 |
| TEXT | Lower-case alphanumeric<br>Upper-case letters and punctuation | 5,33<br>10,66 |
| X12 | ANSI X12 | 5,33 |
| EDIFACT | ASCII character 32 to 94 | 6 |
| BASE 256 | ASCII character 0 to 255 | 8 |

The ASCII is the universal mode of data encoding (the default). It allows encoding any characters, but pairs of digits are compressed the best and the ASCII values (128-255) are compressed the worst.

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**A "DataMatrix" bar-code.**

### 2.10.3.3. QR Code

A **QR Code** (QR is the abbreviation for Quick Response) is a two-dimensional code, readable by QR scanners, mobile phones with a camera, and smartphones. It was created by Toyota subsidiary Denso-Wave in 1994.
QR Code is capable of handling all types of data (see a table below):

| | | |
|---|---|---|
| **Numeric mode:** | 0123456789 | Maximum 7089 characters |
| **Alphanumeric mode:** | ABCDEFGHIJKLMNOPQRSTUVWXYZ<br>0123456789 $ % * + - . / : space | Maximum 4296 characters |
| **Binary mode (8 bits byte data):** | JIS 8-bit (Latin and Kana) | Maximum 2953 bytes |
| **Kanji mode:** | Shift JIS (8140H-9FFCH and E040H-EBBFH) | Maximum 1817 characters |

The **QR Code** characteristics:
The bar-code size (not including quiet zone): Versions 1 to 40 (21*21 modules to 177*177 modules, increasing in steps of 4 modules per side)

Four levels of error correction allowing recovery of:

| Correction Level | Percentage of the recovered information |
|---|---|
| L | 7% |
| M | 15% |
| Q | 25% |
| H | 30% |

The higher the level of correction is, the bigger percentage of information of the corrupted bar-code can be recovered, but fewer information can be encoded in the bar-code of the same size.

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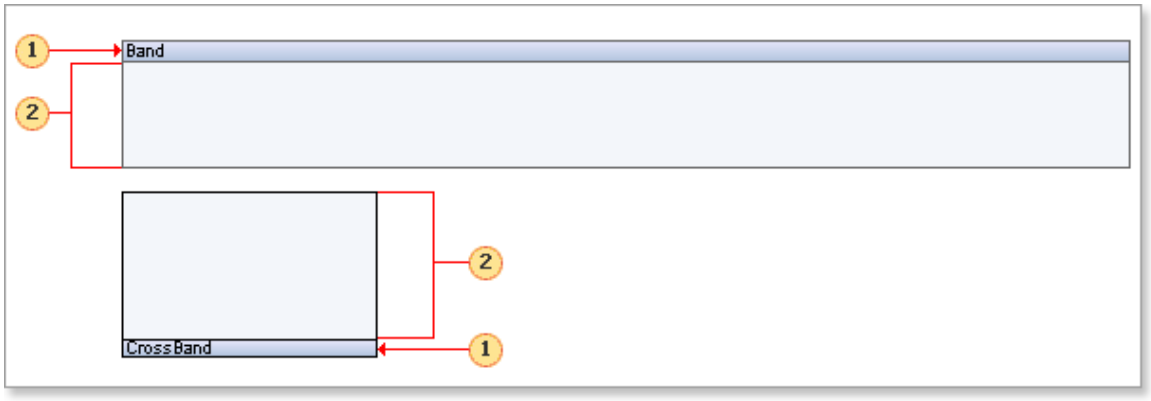
**A "QR Code" barcode.**

## 2.11. Bands

Stimulsoft Reports builds its reports using bands (sometimes bands are called sections in other products). A band consist of two parts: the band header and the working area. On the band header the name of the band is shown, and other information and controls can be displayed. Every band is a container and may contain other components.




1. The band header
2. The band working area

Bands do not appear in the rendered report, only the calculated content of the bands is displayed. The properties of the band control only control its position within the rendered report.

Usually a report will consist of many bands with text and images on them. When a report is rendered, bands are copied as many times as necessary to complete the report. For example, the Header band is output once before data, then the Data band is output once for each record.

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## 2.11.1. Band Types

There are many bands in Stimulsoft Reports. Each type of band has its own unique capabilities. All bands fall into one of two categories: standard bands or cross bands.

### Standard Bands

Standard bands are rendered top-down. They are usually placed directly on a page. Also they can be placed on a panel.

### Cross Bands

Cross-bands are rendered from left to right. Usually they are placed on standard bands.

There is one special category of band, the Child Band, which whilst it is a standard band is typically used to extend a Data band.

### 2.11.1.1. Standard Bands

Standard bands are the basic elements of any report. The table below shows all the standard bands.

| Icon | Band Name | Description |
|---|---|---|
| | ReportTitle | This band is printed in the beginning of a report |
| | ReportSummary | This band is printed in the end of a report |
| | PageHeader | This band is printed on the top of each page |
| | PageFooter | This band is printed on the bottom of each page |
| | GroupHeader | This band is printed in the beginning of a group |
| | GroupFooter | This band is printed in the end of a group |
| | Header | This band is printed before data |
| | Footer | This band is printed after data |
| | ColumnHeader | This band is printed before a column is output |

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| | | |
|---|---|---|
| | ColumnFooter | This band is printed after a column is output |
| | Data | This band is printed as many times as there are rows in the data source |
| | Hierarchical Data | This band is printed as many times as there are rows in the data source. Data items are output as a tree |
| | Child | This band is printed only once, after the band beneath which it is placed |
| | Empty Data | Fills the free space at the bottom of a page |
| | Overlay | This band is printed on the background of a page. It does not effect on other bands. |

To make the structure of reports easier to understand and to make a report template look clearer each type of band has its own color:

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### 2.11.1.2. Cross-bands

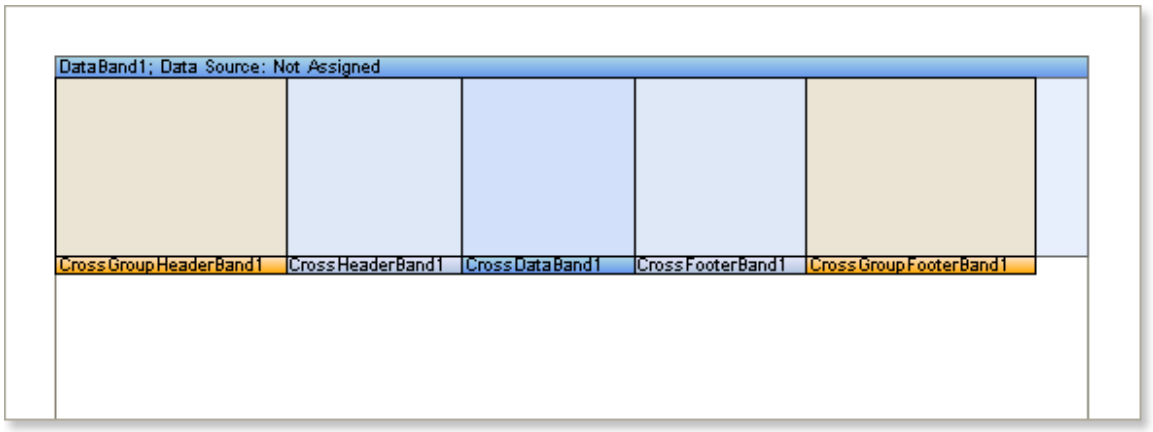
Cross bands must be placed on a simple band, so they cannot be placed directly on a page or a container. They are used to permit the rendering if complicated cross-reports.

**Important!** Cross-bands can be placed only on simple bands. It is impossible to put them on a page or container.

The list below shows types of cross-bands:

| Icon | Name | Description |
|---|---|---|
| | CrossGroupHeader | This band is printed in the beginning of a group |
| | CrossGroupFooter | This band is printed in the end of a group |
| | CrossHeader | This band is printed before data |
| | CrossFooter | This band is printed after data |
| | CrossData | This band is printed as many times as there are rows in the data source |

Unlike simple bands, the cross-bands header is displayed at the bottom of a band.

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## 2.11.2. Output Order of Bands

When rendering a report there is a definite order in which the bands are generated because every band has specific functionality. For example, for a table output you should use three bands: Header, Data, Footer. The Header band is used to place column headers, the Data values are placed on the Data band, and the totals are placed on the Footer band.

The following table describes the bands and their output order:

| Order | Name | Description |
|---|---|---|
| 1 | **PageHeaderBand** | On each page. Output on the first page is optional. |
| 2 | **ReportTitleBand** | Once at the beginning of a report. The ReportTitleBand can be output before the PageHeaderBand if the TitleBeforeHeader property of the page on which both bands are placed is set to true. |
| 3 | **HeaderBand, ColumnHeader** | Once before data output (for the ColumnHeader - once for every column). Output on each new page is optional. |
| 4 | **GroupHeaderBand** | At the beginning of each group. Output on each new page is optional. |
| 5 | **DataBand** | Once for every row of data. |
| 6 | **GroupFooterBand** | At the end of each group. |
| 7 | **FooterBand, ColumnFooter** | After all data has been output (for the ColumnFooter - once for every column). Output on each new page is optional. |
| 8 | **ReportSummaryBand** | Once at the end of a report. |
| 9 | **PageFooterBand** | On every page. Output on first page is optional. |

The Child band is not specified in the preceding table. This band is always printed immediately after the band it follows when placed on a page.

**Note:** Components placed directly on the page (i.e. not on any band) are printed first, followed by the bands.

In a report it is possible to use as many bands of one type as you wish. For example, you can use two Header bands.

If there is more than one band of one type then they will be output in the order of their position on a page. In other words the band furthest up the page will be printed first followed by the other bands of the same type. This is also true with cross-bands except that the band on the left will be printed first.

The order in which bands of the same type are output can be changed by simply moving the bands on the page. You can drag one of the bands with the mouse or you can use the Move Forward and Move Backward commands from the context (right click) menu or you can use the buttons on the Layout toolbar to change the band order.

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## 2.12. Creating Lists

Lists in a report can be output using three bands: **Header** , **Footer** , and **Data** . Data are output using these bands. The basic band is the **Data** band. A data source is specified to each **Data** band. The data source is a table. Each data source has data fields. It is possible to output a table by placing text components with references to these fields. One data source can specify previously unknown number of rows with data. The **Data** band is output as many times as there are rows in the specified data source. For example, if there are 100 rows in the data source, then the **Data** bad will be output 100 times. If it is not enough space on one page, the second page will be generated and printing will be continued. Using the **Header** band, headers will be added to the table that is output using the **Data** band. Correspondingly, the **Footer** band is used to output different totals by the output table.

### 2.12.1. Data Source of Data Band

It is necessary to specify what data source will be used when you output lists in the **Data** band. It is important because report generator should know how many times the **Data** band must be printed. Therefore, the reference to the **Data** band is specified. This can be done with several ways. First, it is possible to use the **Data** band editor. To call the editor it is enough double-click on the **Data** band . Also it is possible to call the editor from the context menu. See below an example of this menu.

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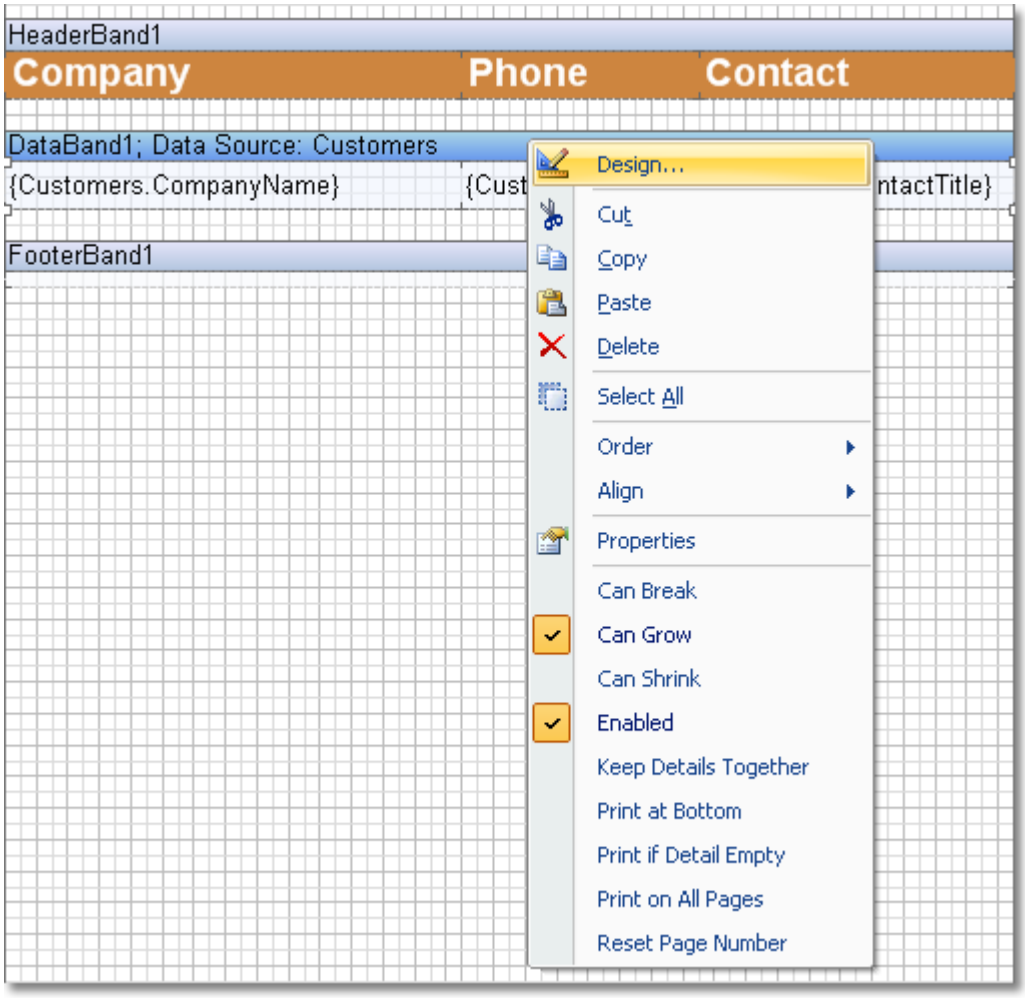
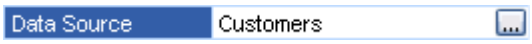



Also the editor can be called using the **DataSource** property of the **Data** band.




**Data** band editor allows quickly selecting data source. Data source is selected on the first bookmark of the **Data** band editor. All data sources are grouped in categories. Each category is one data connection with data in the Dictionary of Data. The picture below shows data in the **Data** band editor.

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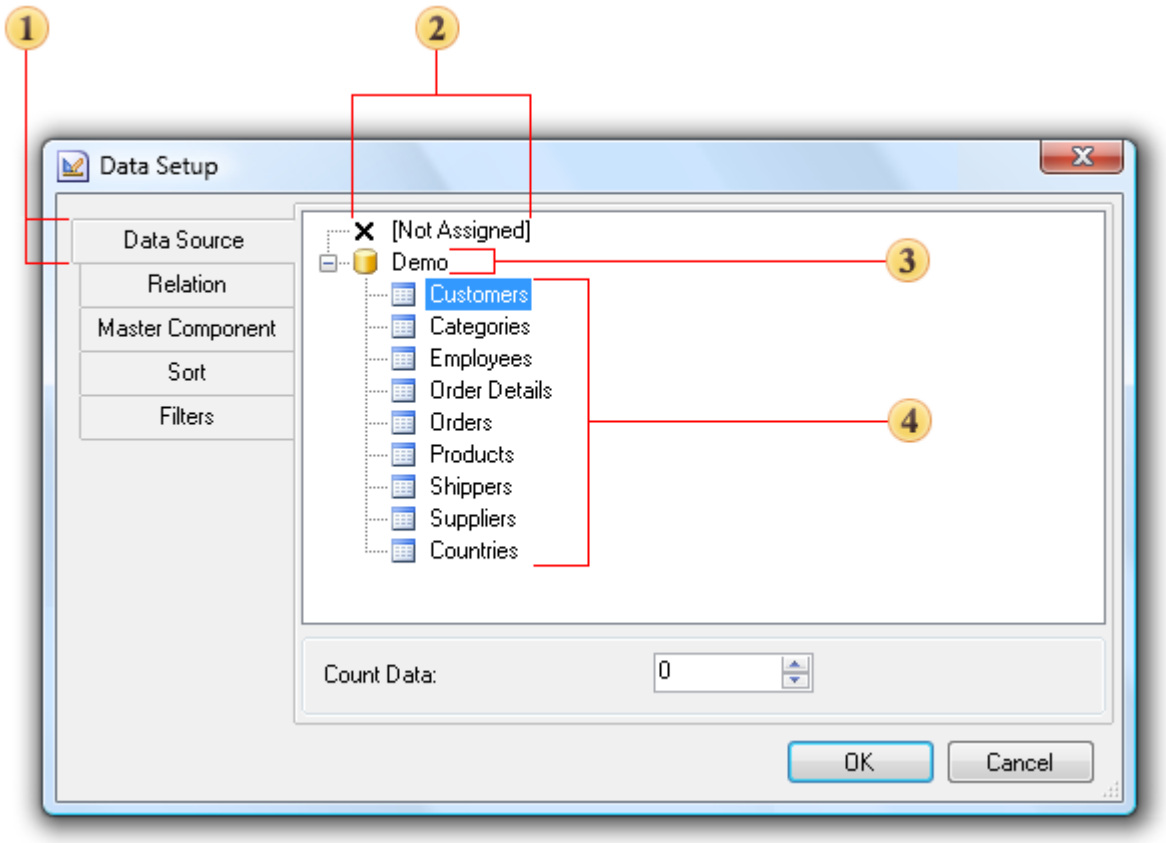


1. Select data source bookmark of the **Data** band.
2. Select this node if there is no need to specify any data source.
3. The "Demo" category of data.
4. The "Demo" category data source .

Second, it is possible to use quick button on the **Data** band and select data source from menu. Basic elements of menu are represented on the picture below.

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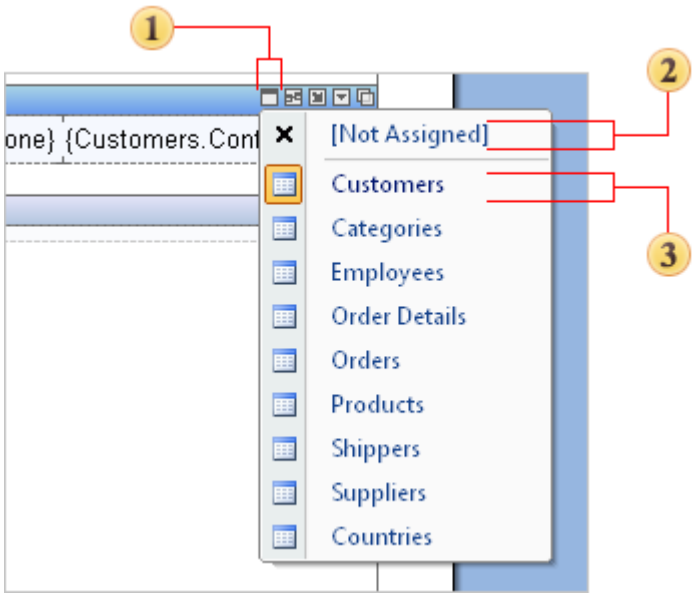
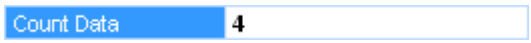



1. Quick button the select data source.
2. This menu item is used to reset data source selection.
3. The **Customers** data source is selected.

## 2.12.2. Virtual Data Band

Sometimes it is necessary to print a **Data** band several times without specifying a data source. The **CountData** property is used for this purpose.




It is possible to specify number of elements in the **Data** band editor. On the picture below the **Data** editor is shown.

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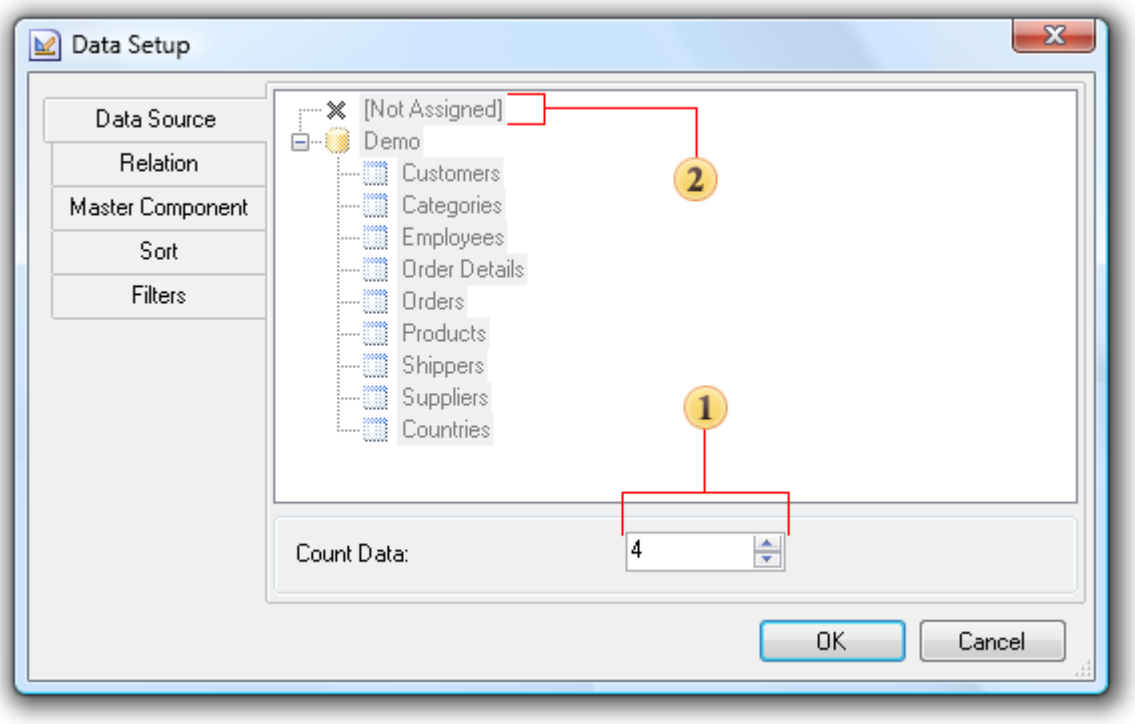


1 The field in what number of elements for the **Data** band can be specified.
2 A data source is not specified.

By default the **CountData** property is 0. But if to set it to 4, then the **Data** band will be printed 4 times. This can be used to print empty columns. It is important to remember that in this case data source is not specified.

## 2.12.3. List Output

Render a report that prints a list. Put one **Data** band on a page. Using the **DataSource** property assign a data source to the band. Put **Text** components on the band. Make a reference to data fields in each component. For example:

```
{Customers.CompanyName}
```

The report template will have the following view.

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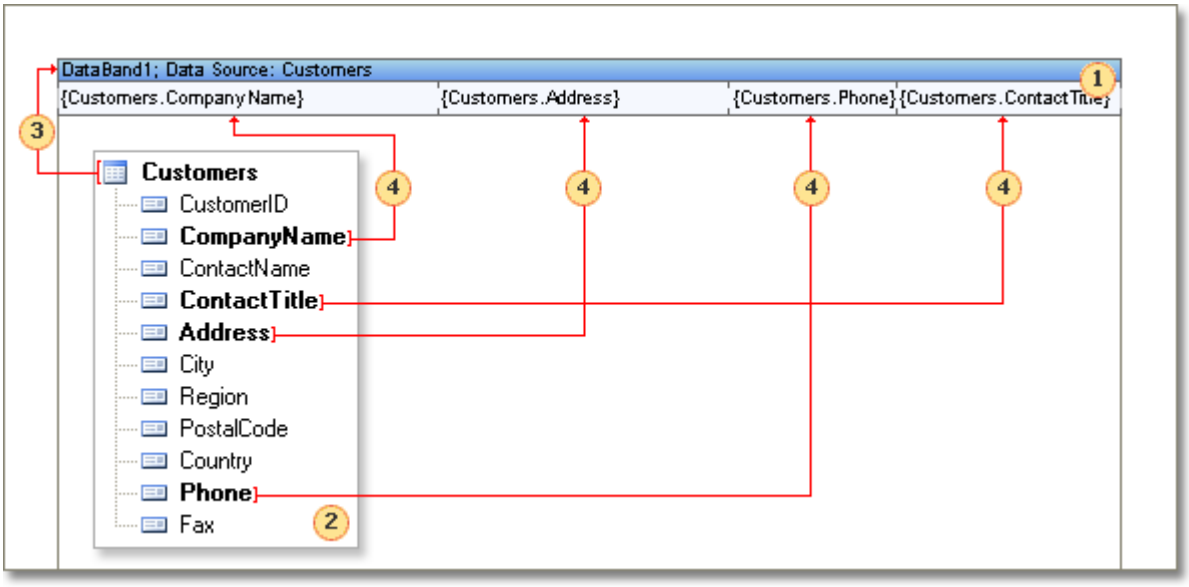


1. **Data** band that outputs a table.
2. The data source that is used to get data rows.
3. Reference to the data source. It is necessary to specify data source to the **Data** band.
4. Reference to the data source. **Text** components are placed on the **Data** band. References to data sources fields are created. When rendering, all references will be changed on data.

After report rendering all references to data fields will be changed with data from specified fields. Data will be taken from the data source, that was specified for this band. Number of copies of the **Data** band in the rendered report will be equal to the number of rows in the data source. As a result, all fields were output as a list. The picture below shows a rendered report.

| | | | |
|---|---|---|---|
| Alfreds Futterkiste | Obere Str. 57 | 030-0074321 | Sales Representative |
| Ana Trujillo Emparedados y helados | Avda. de la Constitución 2222 | (5) 555-4729 | Owner |
| Antonio Moreno Taquería | Mataderos 2312 | (5) 555-3932 | Owner |
| Around the Horn | 120 Hanover Sq. | (171) 555-7788 | Sales Representative |
| Berglunds snabbköp | Berguvsvägen 8 | 0921-12 34 65 | Order Administrator |
| Blauer See Delikatessen | Forsterstr. 57 | 0621-08460 | Sales Representative |
| Blondesddsl père et fils | 24, place Kléber | 88.60.15.31 | Marketing Manager |
| Bólido Comidas preparadas | C/ Araquil, 67 | (91) 555 22 82 | Owner |
| Bon app' | 12, rue des Bouchers | 91.24.45.40 | Owner |
| Bottom-Dollar Markets | 23 Tsawassen Blvd. | (604) 555-4729 | Accounting Manager |
| B's Beverages | Fauntleroy Circus | (171) 555-1212 | Sales Representative |
| Cactus Comidas para llevar | Cerrito 333 | (1) 135-5555 | Sales Agent |
| Centro comercial Moctezuma | Sierras de Granada 9993 | (5) 555-3392 | Marketing Manager |
| Chop-suey Chinese | Hauptstr. 29 | 0452-076545 | Owner |
| Comércio Mineiro | Av. dos Lusíadas, 23 | (11) 555-7647 | Sales Associate |
| Consolidated Holdings | Berkeley Gardens 12 Brewery | (171) 555-2282 | Sales Representative |
| Drachenblut Delikatessen | Walserweg 21 | 0241-039123 | Order Administrator |
| Du monde entier | 67, rue des Cinquante Otages | 40.67.88.88 | Owner |

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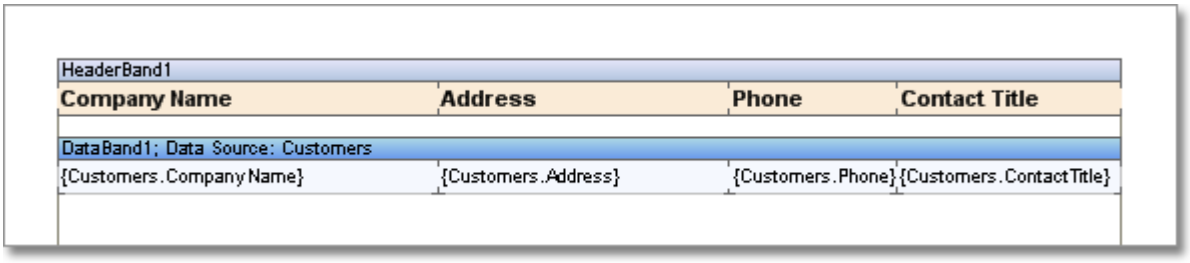
If all lists cannot be placed on one page, then the report generator will add additional pages.

## 2.12.4. List with Header

Usually, a name of a column is output over each column. To output data name or other information before data the special **Header** band is used. It is placed on a page before the **Data** band. There should not be any headers between the **Data** band and the **Header** band. On the picture below a sample of a report with one **Header** band and one **Data** band is shown.




Create a new report. Put a data band on a page. Add the **Header** band to a report. Put text components on a band. Specify data name, which are output on the **Data** band, in these text components. Increase the font size, make it bold. Change the text components background on the **Header** band. Render a report. The picture below shows the result of report rendering.

| Company Name | Address | Phone | Contact Title |
|---|---|---|---|
| Alfreds Futterkiste | Obere Str. 57 | 030-0074321 | Sales Representative |
| Ana Trujillo Emparedados y helados | Avda. de la Constitución 2222 | (5) 555-4729 | Owner |
| Antonio Moreno Taquería | Mataderos 2312 | (5) 555-3932 | Owner |
| Around the Horn | 120 Hanover Sq. | (171) 555-7788 | Sales Representative |
| Berglunds snabbköp | Berguvsvägen 8 | 0921-12 34 65 | Order Administrator |
| Blauer See Delikatessen | Forsterstr. 57 | 0621-08460 | Sales Representative |
| Blondesddsl père et fils | 24, place Kléber | 88.60.15.31 | Marketing Manager |
| Bólido Comidas preparadas | C/ Araquil, 67 | (91) 555 22 82 | Owner |
| Bon app' | 12, rue des Bouchers | 91.24.45.40 | Owner |
| Bottom-Dollar Markets | 23 Tsawassen Blvd. | (604) 555-4729 | Accounting Manager |
| B's Beverages | Fauntleroy Circus | (171) 555-1212 | Sales Representative |
| Cactus Comidas para llevar | Cerrito 333 | (1) 135-5555 | Sales Agent |
| Centro comercial Moctezuma | Sierras de Granada 9993 | (5) 555-3392 | Marketing Manager |
| Chop-suey Chinese | Hauptstr. 29 | 0452-076545 | Owner |
| Comércio Mineiro | Av. dos Lusíadas, 23 | (11) 555-7647 | Sales Associate |
| Consolidated Holdings | Berkeley Gardens 12 Brewery | (171) 555-2282 | Sales Representative |
| Drachenblut Delikatessen | Walserweg 21 | 0241-039123 | Order Administrator |
| Du monde entier | 67, rue des Cinquante Otages | 40.67.88.88 | Owner |

When report rendering for one **Data** band, it is possible to create more than one **Header** band. For

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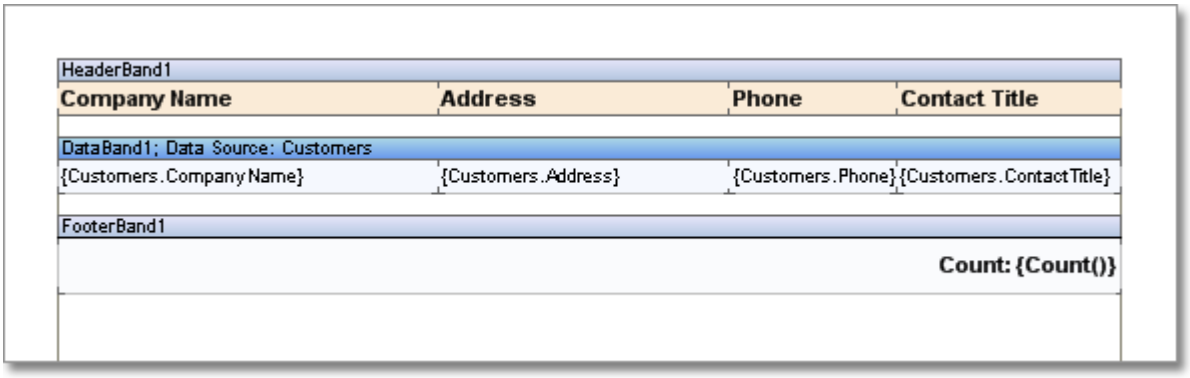
example, one **Header** band can be output only in the beginning of data. And the second one can be output in the beginning of data and on other pages of a report. **Header** bands are output in the same order as they are placed on a page.

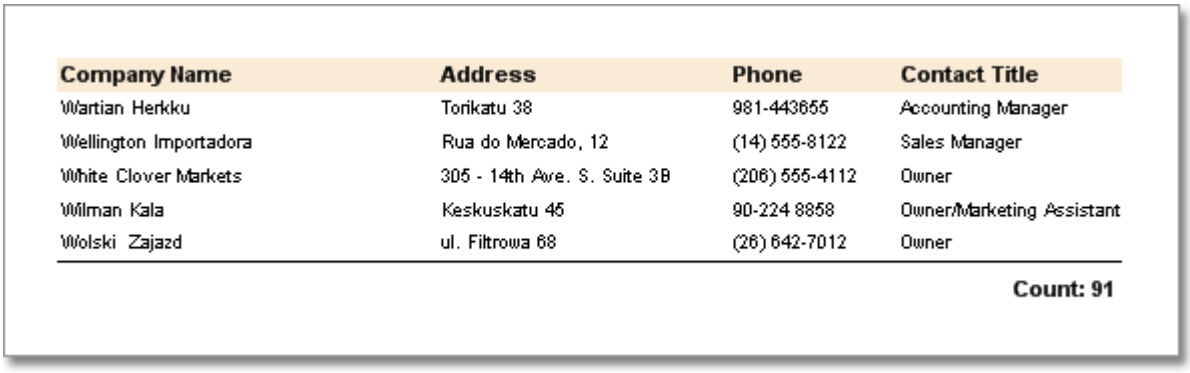
**Notice**. For one **Data** band unlimited number of **Header** bands can be created.

## 2.12.5. List with Footer

Besides **Data** bands and **Headers** bands, **Footer** bands can be used. These bands are used to output total of data. The **Footer** band is placed after data are output. Different information is output in the band. For example, totals of a list, data, additional information. On the picture below a report template with the **Footer** band is shown.




As a result of report rendering with the **Footer** band, the report generator will output total after all data will be output. For example:



| Company Name | Address | Phone | Contact Title |
|---|---|---|---|
| Wartian Herkku | Torikatu 38 | 981-443655 | Accounting Manager |
| Wellington Importadora | Rua do Mercado, 12 | (14) 555-8122 | Sales Manager |
| White Clover Markets | 305 - 14th Ave. S. Suite 3B | (206) 555-4112 | Owner |
| Wilman Kala | Keskuskatu 45 | 90-224 8858 | Owner/Marketing Assistant |
| Wolski Zajazd | ul. Filtrowa 68 | (26) 642-7012 | Owner |

Count: 91

The **Data** band may have unlimited number of bands. Bands of totals will be output in the same order as they are placed on a page.

**Notice.** For one **Data** band unlimited number of **Footer** bands can be created.

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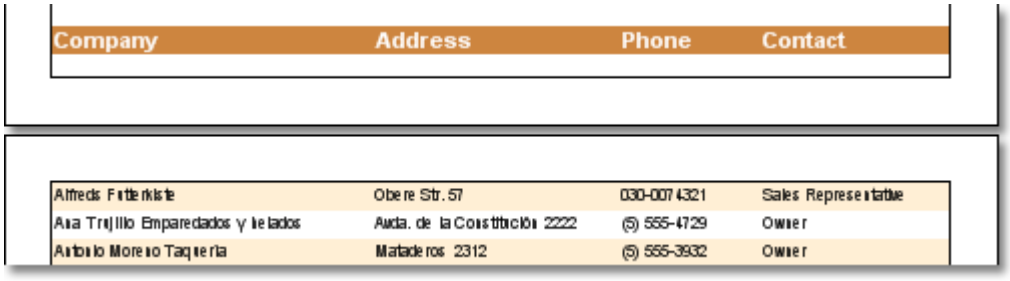
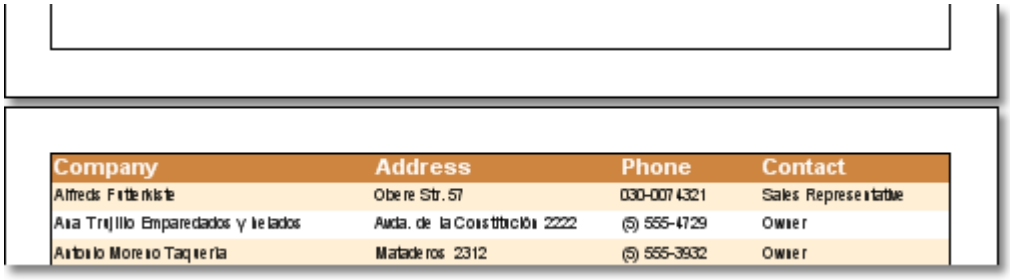
## 2.12.6. KeepHeaderTogether Property

Sometimes, when printing lists, a header will be printed on one page, and the first row of data on another. To escape this visual gap of data the **KeepHeaderTogether** property of the**Header** band can be used. If the property is **true**, then headers will be printed together with data. In other words as minimum one row with data will be output. If there is no enough free space for a header with data row, then they will be carried over on the next page. See a sample of a rendered report with the **KeepHeaderTogether** property set to **false**.




As the same report with keeping header together with the first data row.




By default, the **KeepHeaderTogether** property is set to **true.** So headers will be kept together with the first row of data.

## 2.12.7. KeepFooterTogether Property

The **KeepFooterTogether** property is used to print a list so that to output data row together with totals of data. If the property is **true,** then totals will be printed with the last row of data. If total cannot be placed after the last page printing, then it is output on the current page. If there is no enough free space to output totals, then it is carried over on the next page. On picture below a sample of a report with the **KeepFooterTogether** property set to **false** is shown.

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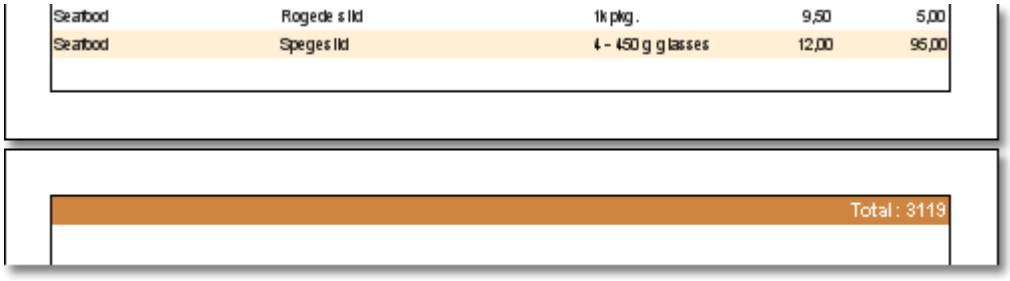
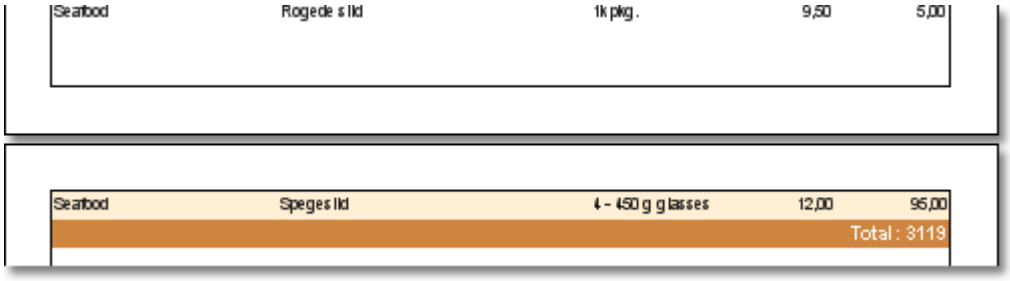



And the same report with keeping footer together with the last row of data.




By default, the**KeepFooterTogether** property is set to **true**, so totals of data will be kept together with last row of data.

## 2.12.8. Enumeration in Lists

Sometimes it is necessary to number lists. It is more convenient to work with an enumerated list. On the picture below an enumerated list is shown.

| | | |
|---|---|---|
| 1. Chai | 10 boxes x 20 bags | 39,00 |
| 2. Chang | 24 - 12 oz bottles | 17,00 |
| 3. Chartreuse verte | 750 cc per bottle | 69,00 |
| 4. Côte de Blaye | 12 - 75 cl bottles | 17,00 |
| 5. Guaraná Fantástica | 12 - 355 ml cans | 20,00 |
| 6. Ipoh Coffee | 16 - 500 g tins | 17,00 |
| 7. Lakkalikööri | 500 ml | 57,00 |
| 8. Laughing Lumberjack Lager | 24 - 12 oz bottles | 52,00 |
| 9. Outback Lager | 24 - 355 ml bottles | 15,00 |
| 10. Rhönbräu Klosterbier | 24 - 0.5 l bottles | 125,00 |
| 11. Sasquatch Ale | 24 - 12 oz bottles | 111,00 |
| 12. Steeleye Stout | 24 - 12 oz bottles | 20,00 |

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To add a number of a row into an expression it is possible to use the **Line** system variable. For example, the following expression can be used to get the result as is shown on the picture above:

```
{Line}.{Products.ProductName}
```

The **Line** system variable returns the number of the current row. Numeration starts with 1. In other words the system variable returns 1 for the first row, 2 for the second one and etc. This system variable has the **Int64** type. The **Line** system variable may also be used in arithmetic expressions. If you need to start numeration from 0, it is necessary to use the followiong expression:

```
{Line - 1}.{Products.ProductName}
```

In addition to the **Line**, **LineABC** and **LineRoman** system variables can also be used for the list enumeration. The **LineABC** system variable returns the alphabetical index instead of a number of a row. The **LineRoman** system variable returns Roman numerals of a number of a row. For example, a report where the **LineABC** system variable is used is shown on the picture below:

| | | |
|---|---|---|
| A.Chai | 10 boxes x 20 bags | 39,00 |
| B.Chang | 24 - 12 oz bottles | 17,00 |
| C.Chartreuse verte | 750 cc per bottle | 69,00 |
| D.Côte de Blaye | 12 - 75 cl bottles | 17,00 |
| E.Guaraná Fantástica | 12 - 355 ml cans | 20,00 |
| F.Ipoh Coffee | 16 - 500 g tins | 17,00 |
| G.Lakkalikööri | 500 ml | 57,00 |
| H.Laughing Lumberjack Lager | 24 - 12 oz bottles | 52,00 |
| I.Outback Lager | 24 - 355 ml bottles | 15,00 |
| J.Rhönbräu Klosterbier | 24 - 0.5 l bottles | 125,00 |
| K.Sasquatch Ale | 24 - 12 oz bottles | 111,00 |
| L.Steeleye Stout | 24 - 12 oz bottles | 20,00 |

A report where the **LineRoman** system variable is used is shown on the picture below:

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| | | |
|---|---|---|
| I.Chai | 10 boxes x 20 bags | 39,00 |
| II.Chang | 24 - 12 oz bottles | 17,00 |
| III.Chartreuse verte | 750 cc per bottle | 69,00 |
| IV.Côte de Blaye | 12 - 75 cl bottles | 17,00 |
| V.Guaraná Fantástica | 12 - 355 ml cans | 20,00 |
| VI.Ipoh Coffee | 16 - 500 g tins | 17,00 |
| VII.Lakkalikööri | 500 ml | 57,00 |
| VIII.Laughing Lumberjack Lager | 24 - 12 oz bottles | 52,00 |
| IX.Outback Lager | 24 - 355 ml bottles | 15,00 |
| X.Rhönbräu Klosterbier | 24 - 0.5 l bottles | 125,00 |
| XI.Sasquatch Ale | 24 - 12 oz bottles | 111,00 |
| XII.Steeleye Stout | 24 - 12 oz bottles | 20,00 |

**LineABC** and **LineRoman** system variables, unlike the **Line** system variable, return numbers as strings. For example, to enumerate a list with letters in the lower case, it is possible to use the following expression:

```
{Line.ToLower()}.{Products.ProductName}
```

## 2.12.9. Selecting Rows One After Another

To make a report look better and for much convenient work with rows it is recommended to alternate rows filled with different colors. This will make your report look professional. There are two ways in the report generator to make such filling: 1. using highlight conditions; 2. using special properties of the **Data** band styles.
The first way - using the **Data** band highlight condition. Open a report that has a list. An example of such a report is shown on the picture below.

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All rows have the same background color. Add highlight condition to the Data band. The **Conditions** property of the band is used for this. Add a new condition in the editor, change background color on another color to fill odd rows, change text color (it is red by default) and set the highlight condition. The **Line** system variable is used to specify whether this row is odd or even. For example:

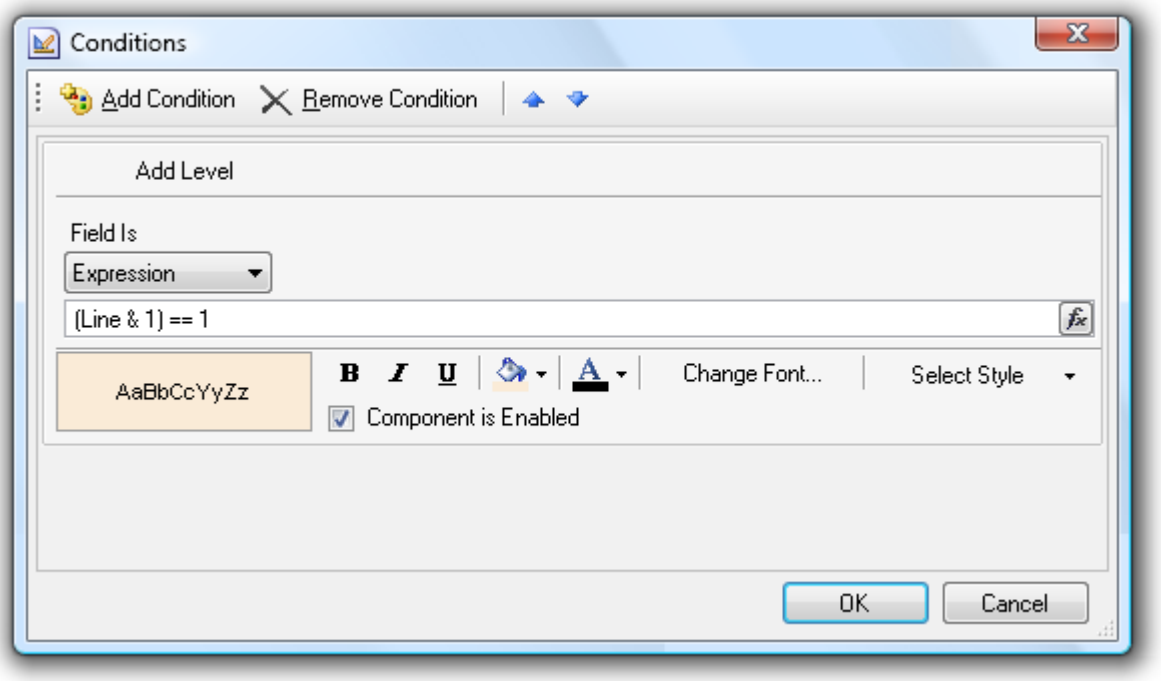
C#:

```
(Line & 1) == 1
```

VB.Net

```
(Line And 1) = 1
```

In other words for odd rows this condition is true. On the picture below the Conditions editor is shown.




After adding a condition to the data band a report will look as it shown on the picture below.

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The second way - using properties of styles. The **Data** band has two special properties - **OddStyle** and **EvenStyle**. To add highlight condition to rows it is enough to specify a style in one of these properties. For example, the collection of styles has **OddStyle**. Select this style in the **OddStyle** property.

The report looks the same as the one where the first way was used.

## 2.12.10. Events and Data Band

Except standard event for all components the **Data** band has three special events: **BeginRenderEvent**, **EndRenderEvent** and **RenderingEvent**. The **Data** band must be created for each data row of the specified data source. For example, if there are 10 rows in the data source, then the **Data** band will be created 10 times. The **BeginRenderEvent** event is called before the data is rendered. In other words when data rows are not output. The event can be used for initialization some data ans variables, calling some actions. The **EndRenderEvent** event is called after the **Data** band is rendered, when all data rows will be output. In this event data processing, totals calculation processing is done. **RenderingEvent** event is called when rendering one data row. The event is called before the **Data** band is printed. If these are 10 data rows, then the **RenderingEvent** event will be output 10 times.

Calculate number of elements in the data source. Write the following code in the **BeginRenderEvent**:

```
myvariable = 0;
```

Also it is necessary to create the **myvariable** variable in the data dictionary. Write the following code in the **RenderingEvent**:

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```
myvariable = myvariable + 1;
```

And the **EndRenderEvent** is not used in this case. As a result of calculation the **myvariable** will store the value that equal to number of elements in the data source. To output this value in the **Text** component the following expression will be used:

```
{myvariable}
```

Also it is necessary to set the **ProcessAtEnd** property of the **Text** component to **true**. It is necessary to output calculated value in the **myvariable.**

## 2.12.11. Data Sorting

Frequently data, which are used for the report rendering, are sorted in order that does not to meet your requirements. In this case, it is possible to sort data using by abilities of Stimulsoft Reports. Sorting can be set for each **Data** band separately. To set sorting it is necessary to use the **Sort** property of the **Data** band. Using this property it is possible to call the editor of the **Data** band.

| | |
|---|---|
| Sort | **[No Sorting]** |

Also it is possible to call the editor by double-click on the band. The **Sort** bookmark is responsible for sorting in the band editor. The picture below shows structure of the bookmark of sorting.

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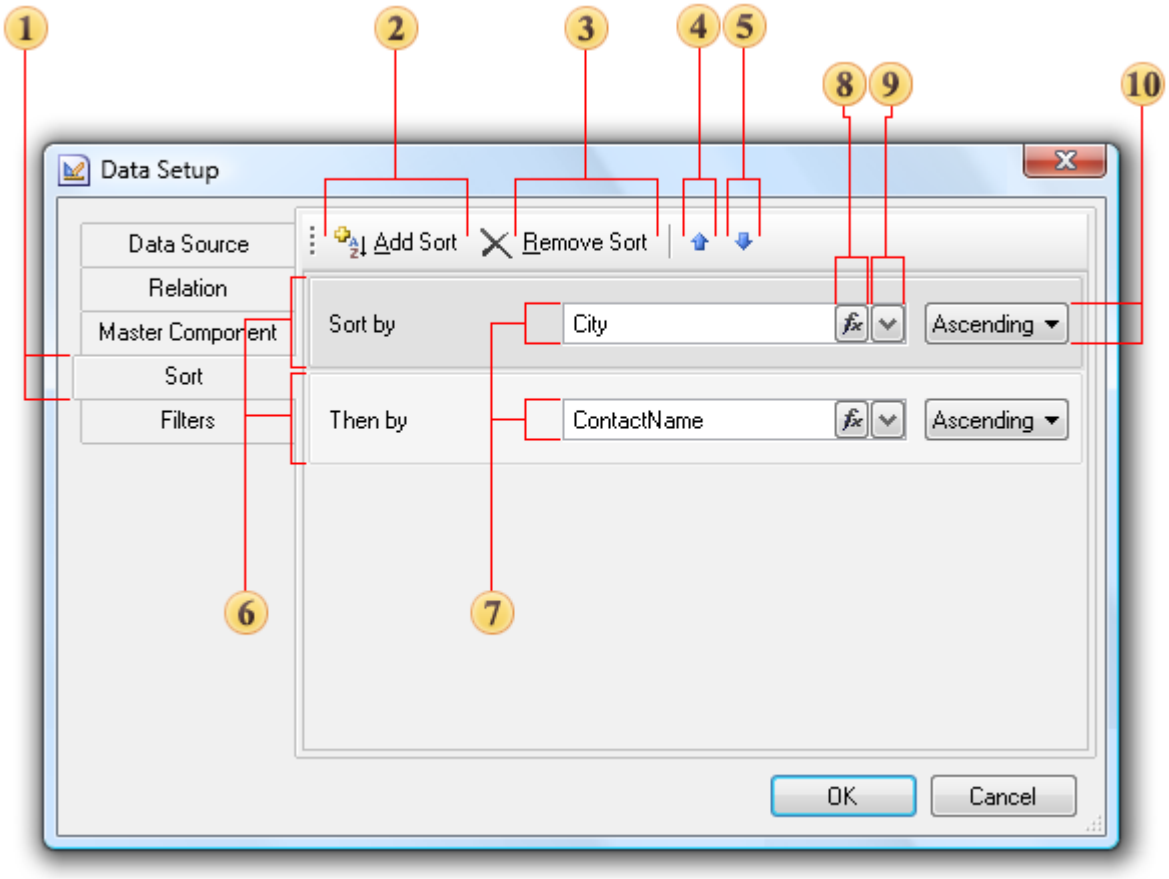


1. The Sort bookmark;
2. The button to add a new level of sorting;
3. The button to remove the selected level of sorting;
4. Move the selected level of sorting upwards;
5. Move the selected level of sorting downwards;
6. Level of sorting;
7. The column or expression which are used for sorting;
8. The button to add or edit expressions of the sorting level;
9. The button the select a column for sorting;
10. Direction of sorting.

Each sorting consist of several levels. For example, the first list can be sorted by one column, then by the second column, then by the third column. On the picture above bookmark sorting, sorting levels are marked with figure 6. Number of levels of sorting is unlimited. Each level of sorting has the sort order. It is possible to sort in ascending order and in descending order. By default, sorting is set in ascending order. In addition to the sort order in each level of sorting the column (figure 9 on the picture above) is set or expression (figure 8 on the picture above) is set, which is used to obtain the values by which sorting will be done.

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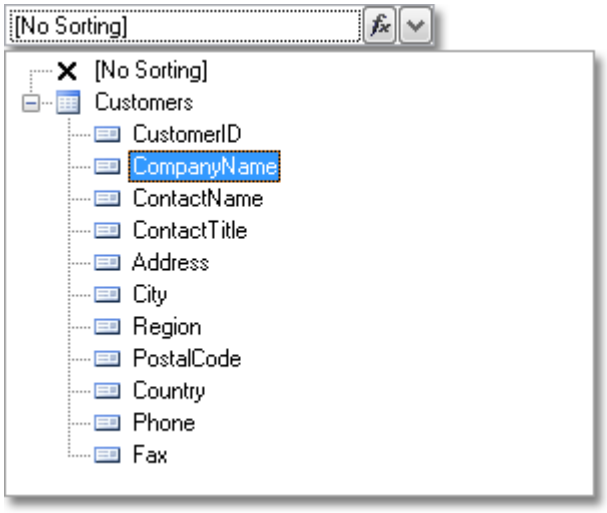


## 2.12.12. Data Filtration

When rendering a report, sometimes it is necessary to print rows of the data source which correspond to the definite condition. To select the necessary rows the data filtration is used. Data filtration is set using the **Filters** property of the **Data** band. In addition to the **Filters** property the **FilterOn** property can also be used. This property controls filter activity.

| | |
|---|---|
| Filter On | True |
| Filters | **[No Filters]** |

How does the filter work? In each filter the condition is set. If the condition is set to **true**, this means that the result of its calculation is **true**, then this data row will be output. If the result of calculation is set to **false**, then this row will be ignored. Each band may contain more than one filter. For example it is necessary to check one of columns of the data source on the equality to the string constant and simultaneously the value of this column should start with the definite character. The filtration is setup in the window of the **Data** band setup (the Filters bookmark). On the picture below such a window is shown.

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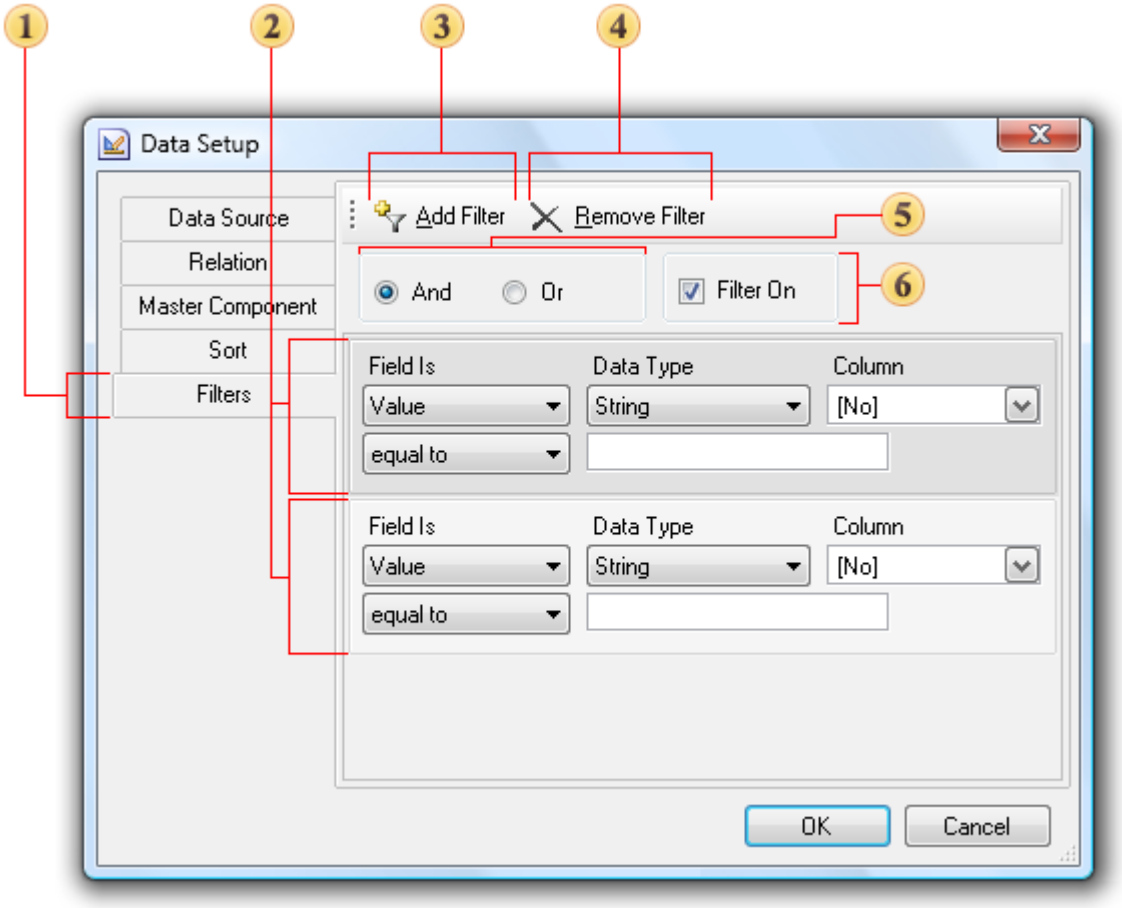
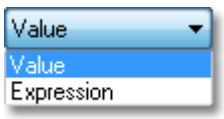



1 The **Filters** bookmark;
2 Filter panels. Each **Data** band may contain one or more filters;
3 The button to select a new filter;
4 The button to delete the selected filter;
5 The type of logical operation, according to what filters will be formed. This field is available if the **Data** band contains more than one filter. There are two options: a logical **And** and logical **Or**. If you select the logical **And**, then data row will be output, if all filters are set to **true**. If you select the logical **Or**, then the data row will be output, if at least one of the filters is set to **true**;
6 The **Filter On** flag is used to enable/disable filters of the data band.

Each filter is a condition for data row processing. There are two ways set a condition:
1. **Value.** The condition is set using the wizard;
2. **Expression.** The condition is set as an expression.




On the picture below, the figure 1 is the field in what the way of calculating condition is indicated.

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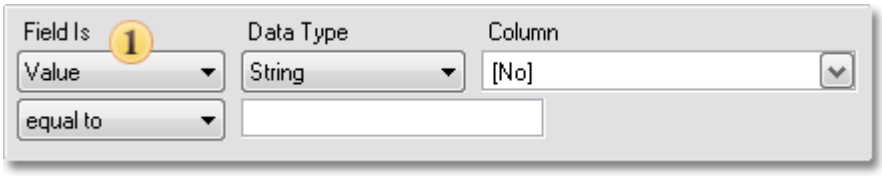
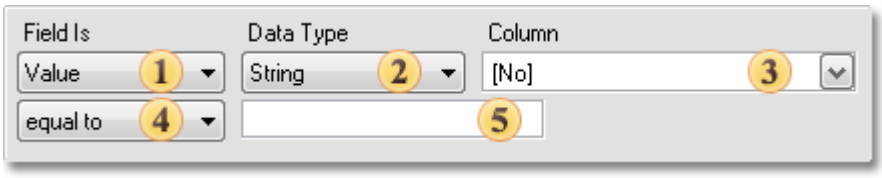
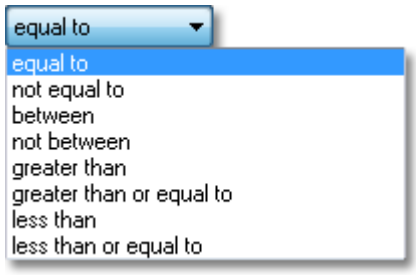



**How to set a condition using the wizard**

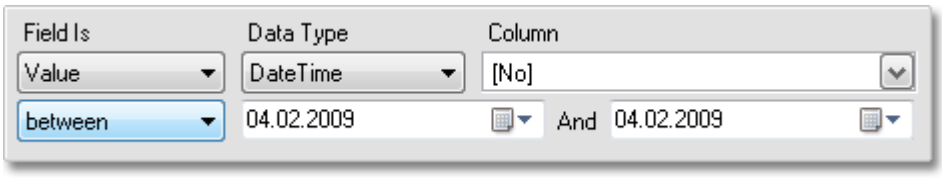
On the picture below the panel of setting a condition using the wizard is shown.




1 The way of selecting a condition;
2 This field specifies the type of data with what the condition will work. There are five types of data: **String**, **Numeric**, **DateTime**, **Boolean**, **Expression**. Data type has affect on how the reporting tool processes a condition. For example, if the data type is a string, then the method of work with strings is used. In addition, depending on the data type the list of available operations of conditions is changed. For example, only for the **String** data type is **Containing** operation is available;
3 The column of the data source is specified in the field. The value from this column will be used as the first value of a condition;
4 The type of operation, using what the calculation of the value of a condition is done. All available types of operation are grouped in the table and shown on the picture below;




5 The second value of a condition of a filter. It is required to specify two values for some operations. For example, for the **between** operation it is required to specify two values.




The table below shows operations and their description for each data type.

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| Name of operation | Types of data | | | | | Description |
|---|---|---|---|---|---|---|
| | String | Numeric | Date | Logic | Expression | |
| equal to | ✓ | ✓ | ✓ | ✓ | ✓ | If the first value is equal to the second value, then the condition is true. |
| not equal to | ✓ | ✓ | ✓ | ✓ | ✓ | If the first value is not not equal to the second value, then the condition is true. |
| between | | ✓ | ✓ | | ✓ | If the first value is in the range, then the condition is true. |
| not between | | ✓ | ✓ | | ✓ | If the first value is not in the range, then the condition is true. |
| greater than | | ✓ | ✓ | | ✓ | If the first value is greater than the second value, then the condition is true. |
| greater than or equal to | | ✓ | ✓ | | ✓ | If the first value greater than or equal to the second value, then the condition is true. |
| less than | | ✓ | ✓ | | ✓ | If the first value is less than the second value, then the condition is true. |
| less then or equal to | | ✓ | ✓ | | ✓ | If the first value is less then or equal to the second value, then the condition is true. |
| containing | ✓ | | | | | If the first value contains the second value, then the condition is true. This operation can be applied only to strings. |
| not containing | ✓ | | | | | If the first value does not contain the second value, then the condition is true. This operation can be applied only to strings. |

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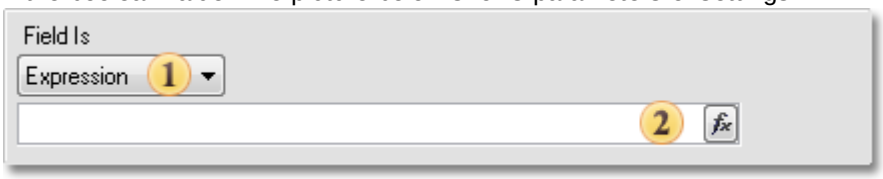
| | | | | | | |
|---|---|---|---|---|---|---|
| beginning with | ✓ | | | | | If the first value begins with the second value, then the condition is true. This operation can be applied only to strings. |
| ending with | ✓ | | | | | If the first value ends with the second value, then the condition is true. This operation can be applied only to strings. |

**How to set a condition using as an expression**

When using the **Expression** type of a condition, the condition is set as a text expression, that should return the boolean value. The picture below shows parameters of settings:




1 The way to select an expression;
2 The expression is specified in this field. It should return the boolean value. For example, the expression in C#:

```
Customers.ID == 53447
```

If the expression will return the value of not a boolean type, then the reporting tool will not be able to render an expression of this type.

## 2.12.13. Lists One After Another

Often it is necessary to output some lists one after another in a report. Stimulsoft Reports has no restrictions on it. All you have to do to render such a report is to place two **Data** bands with headers and footers bands. For example.

Put two **Data** bands on a page, specify them with different data sources. In addition create a header and a footer for the **Data** band. For this, place two **Header** bands and two **Footer** bands. How do you know which header and footer bands belong to the **Data** band? It's very simple. The **Header** band should be placed over the **Data** band. The **Footer** band should be placed under the **Data** band.

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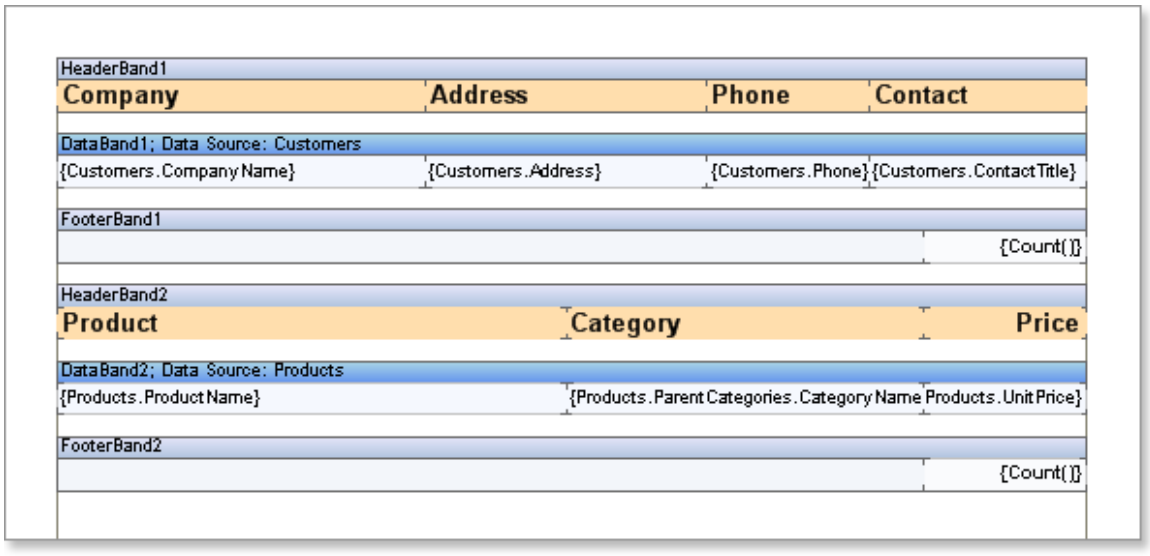
Thus, the **Header** band or the **Footer** band are considered to belong to this **Data** band, if there are no other **Data** bands between them. For example, two bands of each type are placed on a page. The **HeaderBand1** band is placed over the **DataBand1** and there are no other **Data** bands between them. So it belongs to the **DataBand1**. But if to take the **DataBand2**, then between this band and the **HeaderBand1** band the **DataBand1** is placed. Therefore, the **HeaderBand1** does not belong to the **DataBand2**. The **FooterBand1** is placed under the **DataBand1** band and there are no other **Data** bands between them. So it belongs to the **DataBand1**. But the **FooterBand2** band is placed under the **DataBand1**, and the **DataBand2**. But there is the **DataBand2** in placed between the **DataBand1** and the **FooterBand2**. Therefore, the **FooterBand2** belong the the **DataBand2**. Here is an example of a report template, which outputs several lists one after another.




The first **Data** band will output the first list. When the list will be output the second list will be output. The second band will output on the second list. The number of lists is unlimited. The picture below shows the sample of how to output a report with with two lists.

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| Company | Address | Phone | Contact |
|---|---|---|---|
| The Cracker Box | 55 Grizzly Peak Rd. | (406) 555-5834 | Marketing Assistant |
| Toms Spezialitäten | Luisenstr. 48 | 0251-031259 | Marketing Manager |
| Tortuga Restaurante | Avda. Azteca 123 | (5) 555-2933 | Owner |
| Tradição Hipermercados | Av. Inês de Castro, 414 | (11) 555-2167 | Sales Representative |
| Trail's Head Gourmet Provisioners | 722 DaVinci Blvd. | (206) 555-8257 | Sales Associate |
| Vaffeljernet | Smagsloget 45 | 86 21 32 43 | Sales Manager |
| Victuailles en stock | 2, rue du Commerce | 78.32.54.86 | Sales Agent |
| Vins et alcools Chevalier | 59 rue de l'Abbaye | 26.47.15.10 | Accounting Manager |
| Wartian Herkku | Torikatu 38 | 981-443655 | Accounting Manager |
| Wellington Importadora | Rua do Mercado, 12 | (14) 555-8122 | Sales Manager |
| White Clover Markets | 305 - 14th Ave. S. Suite 3B | (206) 555-4112 | Owner |
| Wilman Kala | Keskuskatu 45 | 90-224 8858 | Owner/Marketing Assistant |
| Wolski Zajazd | ul. Filtrowa 68 | (26) 642-7012 | Owner |

**91**

| Product | Category | Price |
|---|---|---|
| Alice Mutton | Meat/Poultry | 39 |
| Aniseed Syrup | Condiments | 10 |
| Boston Crab Meat | Seafood | 18,4 |
| Camembert Pierrot | Dairy Products | 34 |
| Carnarvon Tigers | Seafood | 62,5 |
| Chai | Beverages | 18 |

## 2.12.14. PrintOn Property

The **HeaderBand** and **FooterBand** has the **PrintOn** property, which allows you to output data header or footer on pages according to the value of a property.

The **PrintOn** property has 7 values:

- **All pages**;
- **ExceptFirstPage**;
- **ExceptLastPage**;
- **ExceptFirstAndLastPages**;
- **OnlyFirstPage**;
- **OnlyLastPage**;
- **OnlyFirstAndLastPages**.

The picture below shows a report sample with the **PrintOn** property of the **HeaderBand** set to **OnlyFirstPage**.

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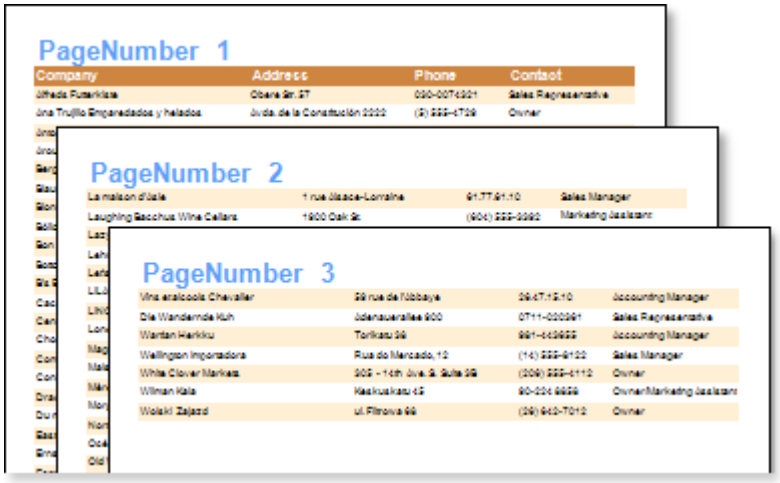
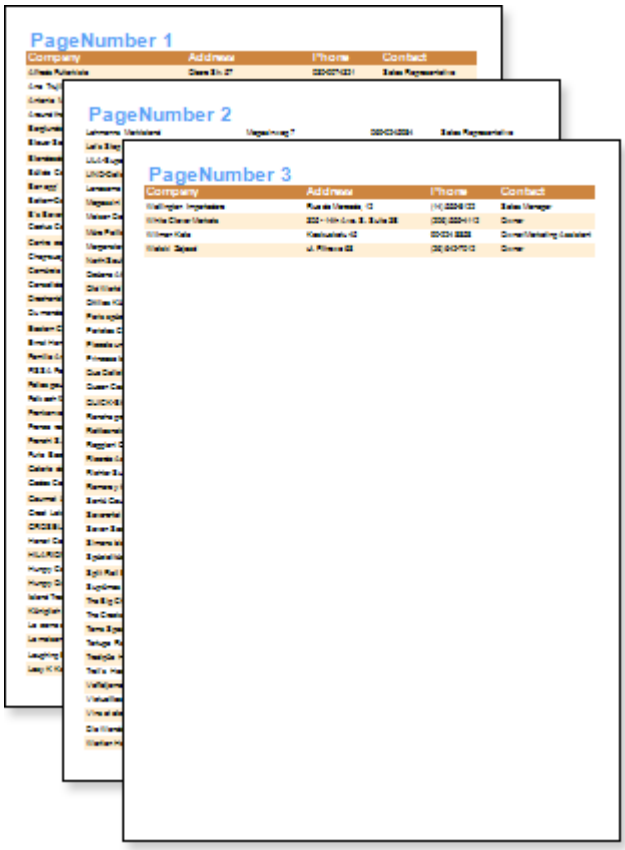



## 2.12.15. PrintOnEvenOddPages Property

The **PrintOnEvenOddPages** property is used to print headers and footers on even/odd pages, for **HeaderBands** and **FooterBands**.

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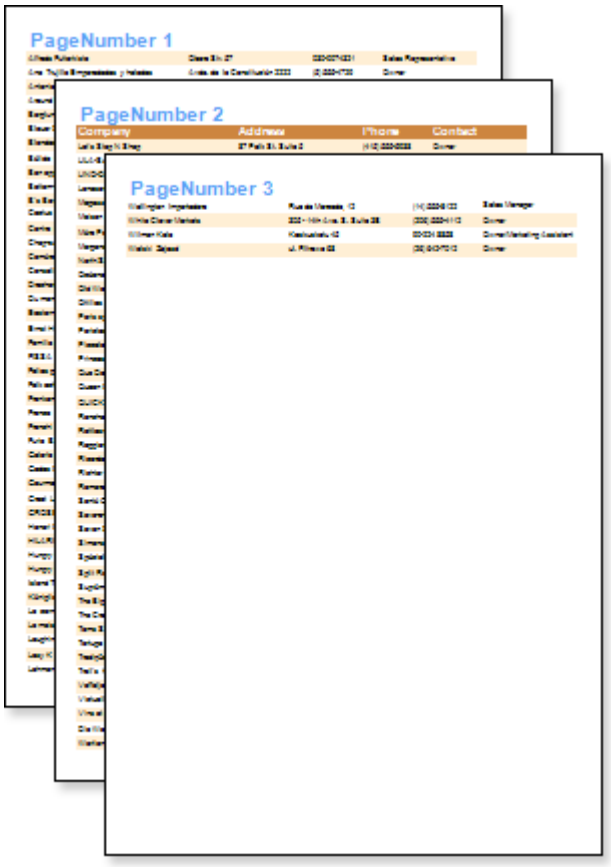
The picture above shows a sample of a report with the **PrintOnEvenOddPages** property of the **HeaderBand** set to **OddPage**.




The picture above shows a sample of a report with the **PrintOnEvenOddPages** property of the **HeaderBand** set to **EvenPage**.

Three values are available for this property:

- **Ignore**. Headers and footers are printed on all pages;
- **PrintOnEvenPages**. Headers and footers are printed on even pages;
- **PrintOnOddPage**. Headers and footers are printed on odd pages.

## 2.12.16. PrintOnAllPages Property

**HeaderBand** and **FooterBand** have the **PrintOnAllPages** property, which can take two values: **true** or **false**.
If the property is set to **true**, then the data header data and data footer will be displayed on each page.
If the property is set to **false**, then the data header will be displayed on the first page of a report, the data footer will be displayed on the last page of a report.
By default, the **PrintOnAllPages** property is set to **true**.

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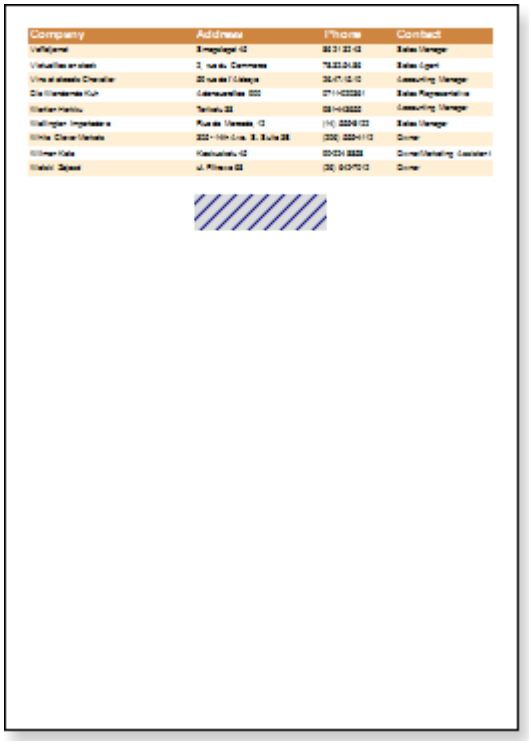
## 2.12.17. PrintAtBottom Property

**HeaderBand** and **FooterBand** have the **PrintAtBottom** property.
Sometimes data take third part of a page and the data footer will be output right after the data ends.




The picture above shows data footer output after data.
If you want to output the footer on the bottom of the page, then set the **PrintAtBottom** property for the FooterBand to **true**.
The data footer will be displayed at the bottom of the page.

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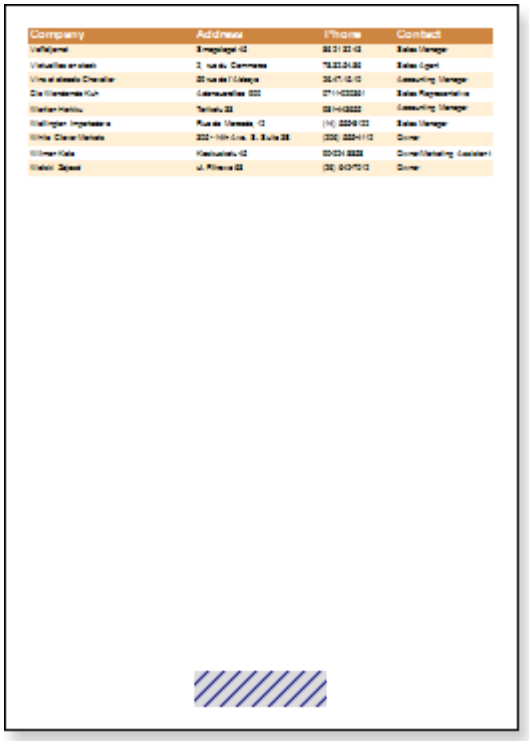


The default value of the property is set to **false**.

## 2.13. Creating Master-Detail Lists

The previous topic describes how to create a report using data as a table. And data are not connected to each other. Three bands were used: **Data**, **Header,** and **Footer**. But sometimes it is required to create reports and output data which are organized in some levels and connected to each other. For example, invoice and a list of goods, clients and goods delivery to them etc. In this case **Master-Detail** reports are used. These are reports in which the output value of the Master data source, corresponds to the number of values (from 0 and greater) from the Detail data source. On the picture below the example of the Master-Detail report is shown:

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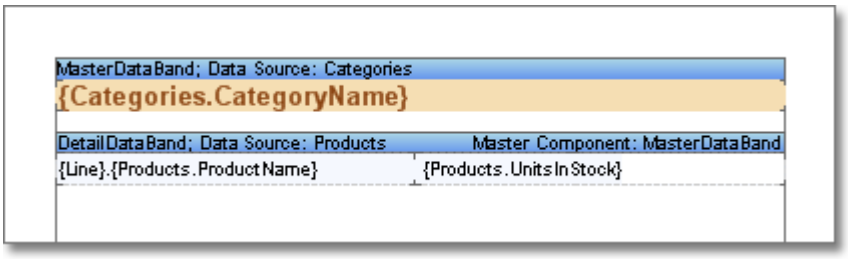
| Beverages | |
|---|---|
| 1.Chai | 10 boxes x 20 bags |
| 2.Chang | 24 - 12 oz bottles |
| 3.Chartreuse verte | 750 cc per bottle |
| 4.Côte de Blaye | 12 - 75 cl bottles |
| 5.Guaraná Fantástica | 12 - 355 ml cans |
| 6.Ipoh Coffee | 16 - 500 g tins |
| 7.Lakkalikööri | 500 ml |
| 8.Laughing Lumberjack Lager | 24 - 12 oz bottles |
| 9.Outback Lager | 24 - 355 ml bottles |
| 10.Rhönbräu Klosterbier | 24 - 0.5 l bottles |
| 11.Sasquatch Ale | 24 - 12 oz bottles |
| 12.Steeleye Stout | 24 - 12 oz bottles |
| 12 | |
| | |
| **Condiments** | |
| 1.Aniseed Syrup | 12 - 550 ml bottles |
| 2.Chef Anton's Cajun Seasoning | 48 - 6 oz jars |
| 3.Chef Anton's Gumbo Mix | 36 boxes |
| 4.Genen Shouyu | 24 - 250 ml bottles |
| 5.Grandma's Boysenberry Spread | 12 - 8 oz jars |
| 6.Gula Malacca | 20 - 2 kg bags |
| 7.Louisiana Fiery Hot Pepper Sauce | 32 - 8 oz bottles |
| 8.Louisiana Hot Spiced Okra | 24 - 8 oz jars |
| 9.Northwoods Cranberry Sauce | 12 - 12 oz jars |
| 10.Original Frankfurter grüne Soße | 12 boxes |
| 11.Sirop d'érable | 24 - 500 ml bottles |
| 12.Vegie-spread | 15 - 625 g jars |
| 12 | |

As one can see on the picture, each category of products corresponds to the list of products from this category. An example of the Master-Detail report template is shown on the picture below:




Data are output in the Detail part of the Master-Detail report are nested data. These data are as if nested into one data row of the Master data source. And the number of nesting is called the level of nesting. For example, if in the report the Master-Detail report two lists are output and the second list is connected with the first list, then this report will have two levels of nesting (the first is the Master, and the second is the Detail). And if this detailed list will have an additional list which will detail this list, then this report will have three levels of nesting (the first is the Master, the second is the Detail, and the third is the SubDetail). The number of nesting is unlimited. Usually number of nesting is no more than 3-4 levels.

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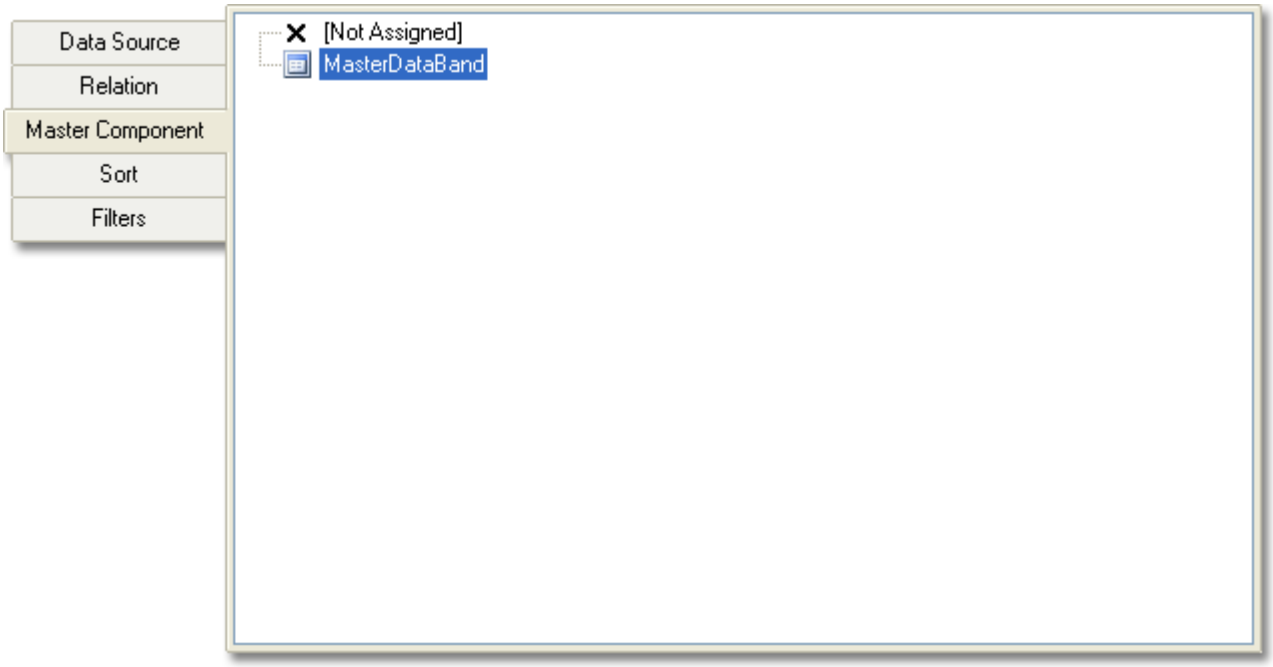
## 2.13.1. MasterComponent Property

Put two **Data** bands on a page to start creating the Master-Detail report. Specify the Master data source to the first band (this is the Master band). Specify the Detail data source to the second band (this is the Detail). Then, it is necessary to bind these bands using the **MasterComponent** property of the second band. The Master band should be selected.

| MasterComponent | **MasterDataBand** |
|---|---|

The selection can be made in the **Data** band editor window.




After filling the **MasterComponent** property two bands will be bound to each other. When printing one row of the Master band, all rows of the Detail band will be output. The Detail band will not be printed itself but only in relation to the Master band.

## 2.13.2. DataRelation Property

After filling the **MasterComponent** property it is necessary to fill the **Data Relation** property of the Detail band. This relation is used to select detailed data only for the specific Master band row. If the relation is not specified, then all Detail band rows will be output for each rows of the Master band.

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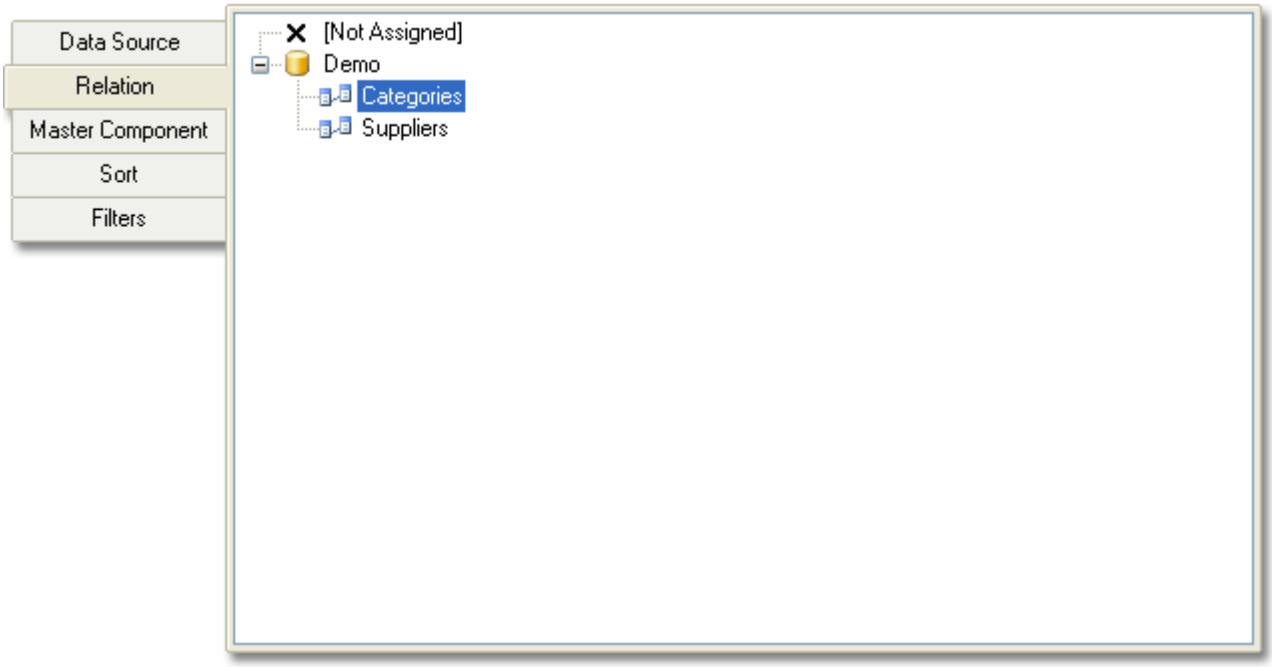
| Data Relation | Categories |
|---|---|

Selection of relation occurs using the **Data** band editor, as well as in case with the **MasterComponent** property.




Selection is done between relations which were created between Master and Detail data sources, and in which the Detail data source is subordinate data source. There can be more than one relation (for example, as seen on the picture above). Therefore, it is important to select the correct relation.

### 2.13.2.1. Relation

If the **Relation** is not specified in the **Master-Detail** report, then, for each **Master** record, all **Detail** records will be printed. In order to build a **Master-Detail** report, which will print only those **Detail** records that are associated with this **Master** record, you should create a **Relation** between data sources. The **Relation** describes the relationship between data sources such as "master-detail". For example, in the table of the **Categories** data source in the **CategoriesID** data column, may be one record with a unique name **1**, and in the table of the **Products** data source in the **CategoriesID** column data may be many records with the same unique name **1**. The picture below shows an example of data source tables:

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Categories

| | CategoryID | CategoryName | Description |
|---|---|---|---|
| ▶ ⊞ | 1 | Beverages | Soft drinks, coffees, teas, beer |
| ⊞ | 2 | Condiments | Sweet and savory sauces |
| ⊞ | 3 | Confections | Desserts, candies, and sweet |
| ⊞ | 4 | Dairy Products | Cheeses |
| ⊞ | 5 | Grains/Cereals | Breads, crackers, pasta, and |
| ⊞ | 6 | Meat/Poultry | Prepared meats |
| ⊞ | 7 | Produce | Dried fruit and bean curd |
| ⊞ | 8 | Seafood | Seaweed and fish |

Products

| | ProductID | ProductName | SupplierID | CategoryID |
|---|---|---|---|---|
| ▶ ⊞ | 1 | Chai | 1 | 1 |
| ⊞ | 2 | Chang | 1 | 1 |
| ⊞ | 24 | Guaraná Fant | 10 | 1 |
| ⊞ | 34 | Sasquatch Al | 16 | 1 |
| ⊞ | 35 | Steeleye Sto | 16 | 1 |
| ⊞ | 38 | Côte de Blay | 18 | 1 |
| ⊞ | 39 | Chartreuse v | 18 | 1 |
| ⊞ | 43 | Ipoh Coffee | 20 | 1 |
| ⊞ | 67 | Laughing Lu | 16 | 1 |
| ⊞ | 70 | Outback Lag | 7 | 1 |
| ⊞ | 75 | Rhönbräu Klo | 12 | 1 |
| ⊞ | 76 | Lakkalikööri | 23 | 1 |
| ⊞ | 3 | Aniseed Syru | 1 | 2 |
| ⊞ | 4 | Chef Anton's | 2 | 2 |

As can be seen from the picture above, one record with the name **1** in the table of the **Categories** data source corresponds to 12 records in the table of the **Products** data source. In other words, if you create a **Relation** by the **CategoriesID** column data between **Categories** and **Products** data tables, then when creating the **Master-Detail** report, the first **Master** record will correspond to **Detail** 12 entries. The picture below shows an example of the rendered **Master-Detail** report by **CategoryName** and **ProductName** columns, where the **Relation** is arranged between the **Product** and **Category** data sources by columns of **CategoryID** data:

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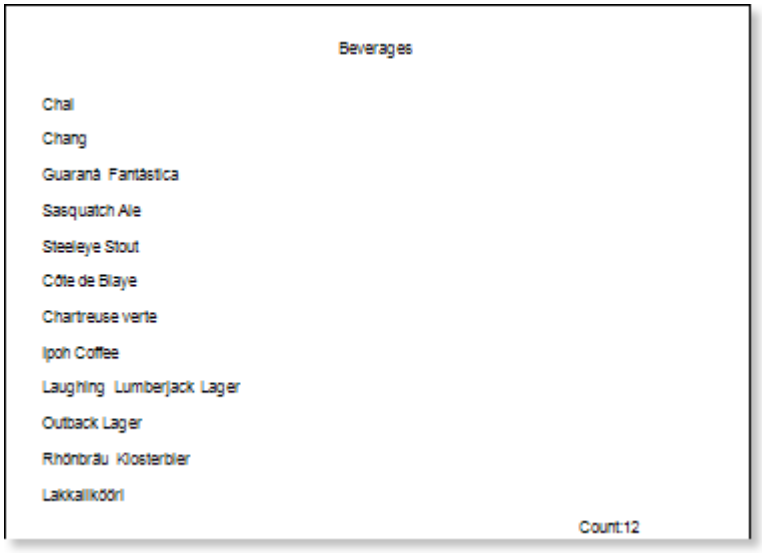
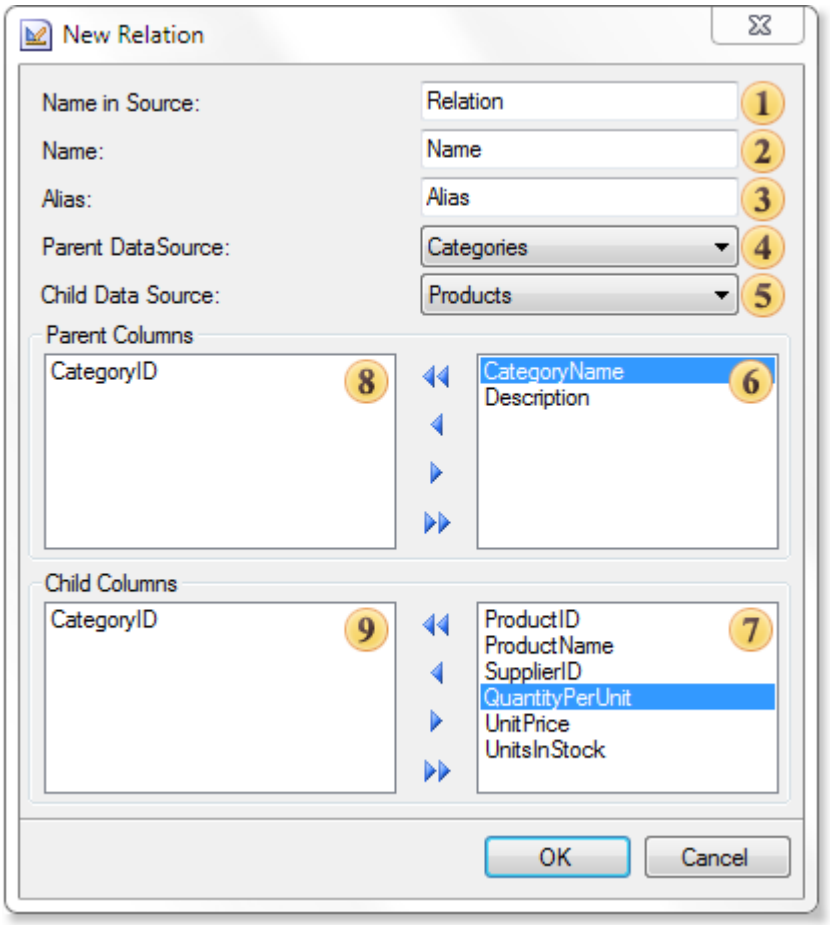



The parameters of relations are specified in the **New Relation** window. To invoke this window, choose the **New Relation** item from the context menu of the data source or click the **New Relation** button form the **Data Setup** window in the **Relation** tab. The picture below shows an example of the **New Relation** window:

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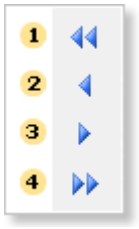
As can be seen on the picture above, nine fields, which define the relation parameters:

1 The **Name in Source** field provides an opportunity to change the name of the data source (not in the report), i.e. the name in the original data source, for example, in a database;
2 The **Name** field provides an opportunity to change the name of the relation that is displayed to a user;
3 The **Alias** field provides an opportunity to change the alias of the relation;
4 The **Parent DataSource** field provides an opportunity to change the main data source, i.e. the data source which entries are **Master** entries in the **Master-Detail** report is selected;
5 The **Child Data Source** provides an opportunity to change the child data source, i.e. the data source which entries are **Detail** entries in the **Master-Detail** report is selected;
6 This field displays the column-keys of the master data source;
7 This field displays the column-keys of the child data source;
8 - 9 fields shows the master and child data column-keys, which set the **Relation** between data sources. Column-keys should comply with all rules of creation relations in ADO.NET:
1 It should be the same number of them;
2 Their types should match, i.e. if the master column-key of the **String** type, then the child column-key should be of the **String** type;
3 And so on;

Control panel of data columns in the **New Relation** dialog box is represented by 4 buttons.




1 The button to move all data columns from the field 6 or 7 in the field 8 or 9, respectively;
2 The button to move the selected data column from the field 6 or 7 in the field 8 or 9, respectively;
3 The button to move the selected data column from the field 8 or 9 in the field 6 or 7, respectively;
4 The button to move all the data columns from the field 8 or 9 in the field 6 or 7, respectively.

## 2.13.3. Multilevel Nesting

The logic of building Master-Detail reports with more than 2 nesting levels is the same as the logic of building simple Master-Detail reports. For each Detail band the **MasterComponent** and **DataRelation** properties are set. For example, it is necessary to render a report in what there are four nesting levels. The first level is **countries**, the second - **regions**, the third - **cities**, the fourth - **quarters**. In this case one should place **Data** bands one on another on a page for each data source. Set the **MasterComponent** of the second band on the band **countries**. This property for the third band will indicate the **regions** band. For the last band **quarters** - will indicate on the **cities** band.

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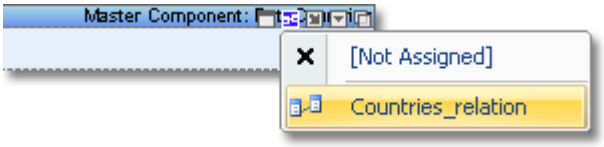
Then it is necessary to select relations for three bands for the report generator is able to select correct data for each detailed band.




Then this report will be ready for rendering. One **Master** band may have more than one **Detail** band. In other words two, three or four **Detail** bands may refer to it. And each of them may have their own Detail bands. There are no limitations on number of nesting levels in the **Master-Detail** reports.

**Notice.** Number of nesting levels in the **Master-Detail** reports is unlimited.

## 2.13.4. KeepDetailsTogether Property

Sometimes, when creating **Master-Detail** reports, a part Details (subordinate entries) of the **Master-Detail** band will be on one page, while another part will be moved to the next page. This may happen due to the fact that all the detailed records will not fit one page. In this case, if it is still necessary to output the **Master** along with its details on one page, you can use the **KeepDetailsTogether** property. By default, this property is set to **false**.

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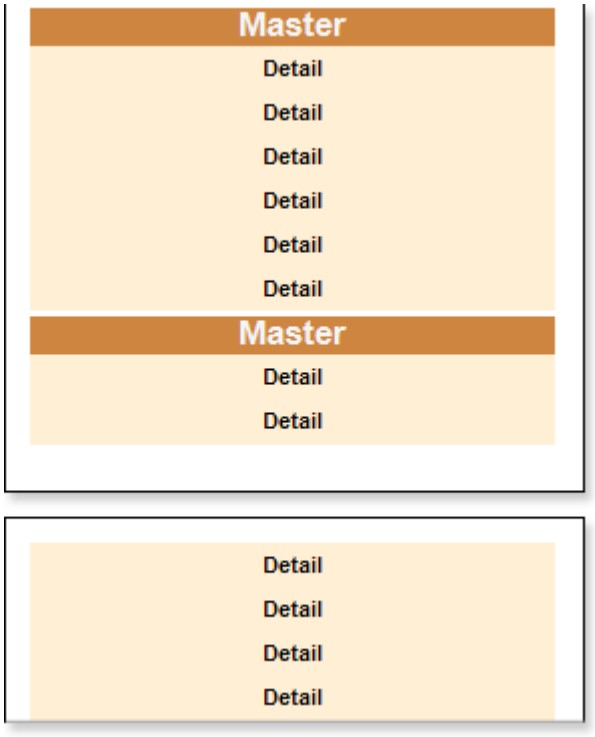


The picture above shows a report in what a part of Details is located on one page, while the other part of details has been moved to the next page. If property is set to **true**, then the report generator will try to place the **Master** and **Detail** records on one page. If the report generator cannot do it, the **Master** and **Details** together will be moved to the next page.

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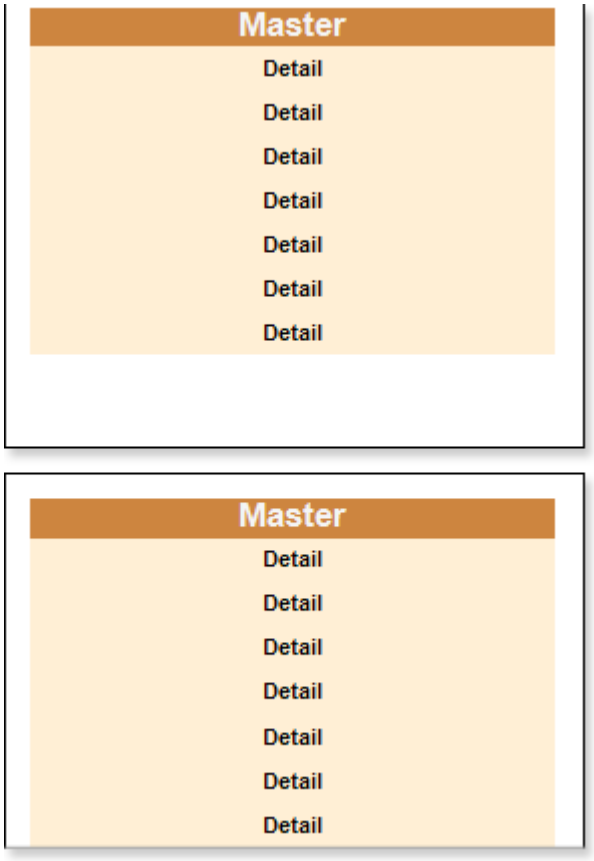


The picture above shows an example of a report with the **KeepDetailsTogether** property of the **Master** set to **true**. If it is not possible to put them together, then the data will be forcibly broken and displayed on different pages. In this case, if the **Master** component has many **Detail** records and take a significant part on the page, and the **KeepDetailsTogether** property is set to **true**, then there may be a large empty space at the bottom of each page.

## 2.13.5. Rows Numbering in Master-Detail Reports

Rows numbering in the Master-Detail reports works the same as in ordinary lists. But there is on difference. If numbering is used in the Detail of the **Data** band, then for each sublist there will be their own numbering. For example, on the picture below the Master-Detail report is shown.

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| | |
|---|---|
| **1.Beverages** | |
| 1.Chai | 10 boxes x 20 bags |
| 2.Chang | 24 - 12 oz bottles |
| 3.Chartreuse verte | 750 cc per bottle |
| 4.Côte de Blaye | 12 - 75 cl bottles |
| 5.Guaraná Fantástica | 12 - 355 ml cans |
| 6.Ipoh Coffee | 16 - 500 g tins |
| 7.Lakkalikööri | 500 ml |
| 8.Laughing Lumberjack Lager | 24 - 12 oz bottles |
| 9.Outback Lager | 24 - 355 ml bottles |
| 10.Rhönbräu Klosterbier | 24 - 0.5 l bottles |
| 11.Sasquatch Ale | 24 - 12 oz bottles |
| 12.Steeleye Stout | 24 - 12 oz bottles |
| **2.Condiments** | |
| 1.Aniseed Syrup | 12 - 550 ml bottles |
| 2.Chef Anton's Cajun Seasoning | 48 - 6 oz jars |
| 3.Chef Anton's Gumbo Mix | 36 boxes |
| 4.Genen Shouyu | 24 - 250 ml bottles |
| 5.Grandma's Boysenberry Spread | 12 - 8 oz jars |
| 6.Gula Malacca | 20 - 2 kg bags |
| 7.Louisiana Fiery Hot Pepper Sauce | 32 - 8 oz bottles |
| 8.Louisiana Hot Spiced Okra | 24 - 8 oz jars |
| 9.Northwoods Cranberry Sauce | 12 - 12 oz jars |
| 10.Original Frankfurter grüne Soße | 12 boxes |
| 11.Sirop d'érable | 24 - 500 ml bottles |
| 12.Vegie-spread | 15 - 625 g jars |

Numbering in the Master list is indicated with the red color. Numbering in the Detail list is indicated with green color. As you can see on the picture, the numbering in the Detail list starts every time after the row from the Master list is output.

Besides using system variables numbering can be done using the **Line** property of the **Data** band. In this case the expression will be as follow:

```
{DetailDataBand1.Line}.{Customers.CompanyName}
```

Why is it necessary? Why not to use the **Line** system variable? The system variable has the visibility zone. For example, you use the **Line** system variable on the Master band. In this case numbering will be output for the Master band. If you use the **Line** system variable on the Detail band, then, in this case, numbering will be output for the Detail band. But what to do if it is necessary to output numbering of two different **Data** bands in one expression? In this case the **Line** property of the **Data** band is used. For example, see the following expression on the Detail band:

```
{DataBand1.Line}.{Line}.{Products.ProductName}
```

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this will lead to the following result in a report:

| | |
|---|---|
| **1.Beverages** | |
| 1.1.Chai | 10 boxes x 20 bags |
| 1.2.Chang | 24 - 12 oz bottles |
| 1.3.Chartreuse verte | 750 cc per bottle |
| 1.4.Côte de Blaye | 12 - 75 cl bottles |
| 1.5.Guaraná Fantástica | 12 - 355 ml cans |
| 1.6.Ipoh Coffee | 16 - 500 g tins |
| 1.7.Lakkalikööri | 500 ml |
| 1.8.Laughing Lumberjack Lager | 24 - 12 oz bottles |
| 1.9.Outback Lager | 24 - 355 ml bottles |
| 1.10.Rhönbräu Klosterbier | 24 - 0.5 l bottles |
| 1.11.Sasquatch Ale | 24 - 12 oz bottles |
| 1.12.Steeleye Stout | 24 - 12 oz bottles |
| **2.Condiments** | |
| 2.1.Aniseed Syrup | 12 - 550 ml bottles |
| 2.2.Chef Anton's Cajun Seasoning | 48 - 6 oz jars |
| 2.3.Chef Anton's Gumbo Mix | 36 boxes |
| 2.4.Genen Shouyu | 24 - 250 ml bottles |
| 2.5.Grandma's Boysenberry Spread | 12 - 8 oz jars |
| 2.6.Gula Malacca | 20 - 2 kg bags |
| 2.7.Louisiana Fiery Hot Pepper Sauce | 32 - 8 oz bottles |
| 2.8.Louisiana Hot Spiced Okra | 24 - 8 oz jars |
| 2.9.Northwoods Cranberry Sauce | 12 - 12 oz jars |
| 2.10.Original Frankfurter grüne Soße | 12 boxes |
| 2.11.Sirop d'érable | 24 - 500 ml bottles |
| 2.12.Vegie-spread | 15 - 625 g jars |

## 2.13.6. Through Lines Numbering in Master-Detail Reports

Besides the **Line** system variable, there is also additional **LineThrough** system variable for numbering the **Master-Detail** lists. What is the difference? The **LineThrough** system variable is used to output numbers using the continuous numbering. On the picture below the same report with continuous numbering is shown.

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| | |
|---|---|
| **1.Beverages** | |
| 1.Chai | 10 boxes x 20 bags |
| 2.Chang | 24 - 12 oz bottles |
| 3.Chartreuse verte | 750 cc per bottle |
| 4.Côte de Blaye | 12 - 75 cl bottles |
| 5.Guaraná Fantástica | 12 - 355 ml cans |
| 6.Ipoh Coffee | 16 - 500 g tins |
| 7.Lakkalikööri | 500 ml |
| 8.Laughing Lumberjack Lager | 24 - 12 oz bottles |
| 9.Outback Lager | 24 - 355 ml bottles |
| 10.Rhönbräu Klosterbier | 24 - 0.5 l bottles |
| 11.Sasquatch Ale | 24 - 12 oz bottles |
| 12.Steeleye Stout | 24 - 12 oz bottles |
| **2.Condiments** | |
| 13.Aniseed Syrup | 12 - 550 ml bottles |
| 14.Chef Anton's Cajun Seasoning | 48 - 6 oz jars |
| 15.Chef Anton's Gumbo Mix | 36 boxes |
| 16.Genen Shouyu | 24 - 250 ml bottles |
| 17.Grandma's Boysenberry Spread | 12 - 8 oz jars |
| 18.Gula Malacca | 20 - 2 kg bags |
| 19.Louisiana Fiery Hot Pepper Sauce | 32 - 8 oz bottles |
| 20.Louisiana Hot Spiced Okra | 24 - 8 oz jars |
| 21.Northwoods Cranberry Sauce | 12 - 12 oz jars |
| 22.Original Frankfurter grüne Soße | 12 boxes |
| 23.Sirop d'érable | 24 - 500 ml bottles |
| 24.Vegie-spread | 15 - 625 g jars |

In this case the numbering of the Detail list starts not after the row of the Master list is output but before the first row of the Detail list is output. The system variable starts numbering with 1.

## 2.13.7. Headers, Footers and Master-Detail Reports

The principle of using **HeaderBands** and **FooterBands** in **Master-Detail** reports is the same as in simple lists. All **HeaderBand1** bands, which are placed above the **DataBand1** bands, up to the next **DataBand2** band, belong to this **DataBand1** band. The **HeaderBand** is placed on the page above the **DataBand**, which outputs data rows. The **HeaderBand** always refers to any particular **DataBand**. Typically, this band is the first **DataBand**, which is located below the **HeaderBand**.
The **FooterBand** is placed below the **DataBand**. And it is meant that the **DataBand**, with what the **HeaderBand** is bind. Each **FooterBand**, refers to any specific **HeaderBand**. Without the **HeaderBand**, the **FooterBand** is not output.

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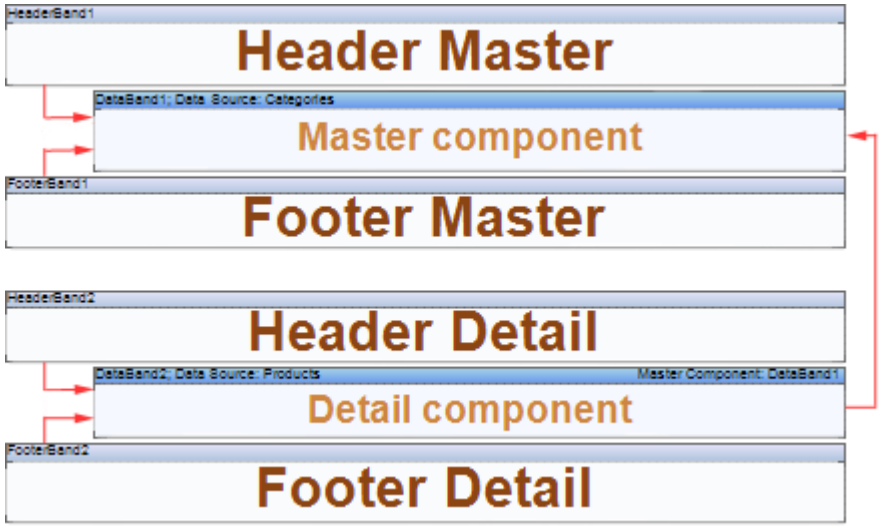


The picture above shows a structure of a **Master-Detail** reports with two **DataBand** bands**.**

## 2.13.8. PrintifDetailEmpty Property

The **PrintifDetailEmpty** property of the **DataBand** band is used in building **Master-Detail** reports. The picture below shows a template of a **Master-Detail** report.

For example, not all **Master** entries have **Detail** records. Then, if the **PrintIfDetailEmpty** property is set to **false**, then the result shown below is obtained:

| | | |
|---|---|---|
| 2 | Condiments | Sweet and savory sauces, relishes, spreads, and seasonings |
| 3 | Aniseed Syrup | 10 |
| 6 | Meat/Poultry | Prepared meats |
| 17 | Alice Mutton | 39 |

Only a part of Master records (in the picture above they are marked with numbers 2 and 6) will be output and the remaining Master records (which have no Detail records) will not be output. To print all Master records, regardless whether they have Detail records, it is necessary to set the **PrintifDetailEmpty** property of the Master band to **true**. An example of a report for this case is shown below below:

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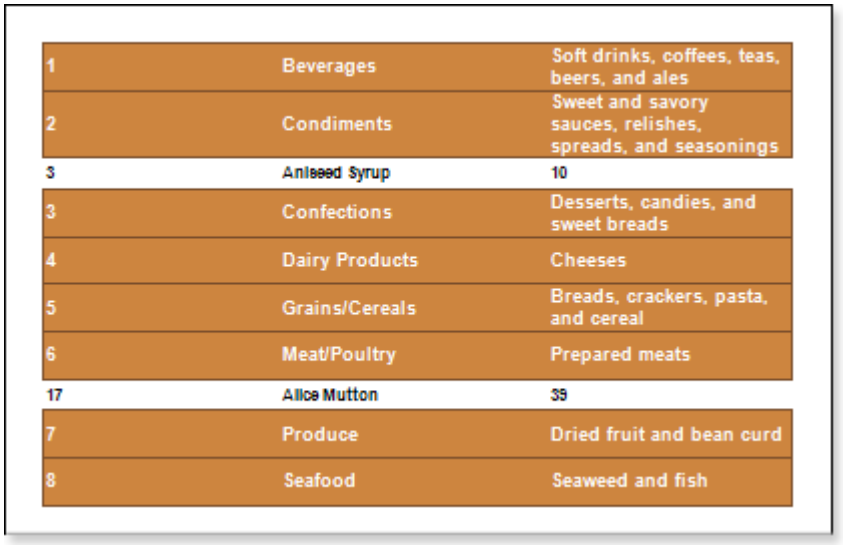

| | | |
|---|---|---|
| 1 | Beverages | Soft drinks, coffees, teas, beers, and ales |
| 2 | Condiments | Sweet and savory sauces, relishes, spreads, and seasonings |
| 3 | Aniseed Syrup | 10 |
| 3 | Confections | Desserts, candies, and sweet breads |
| 4 | Dairy Products | Cheeses |
| 5 | Grains/Cereals | Breads, crackers, pasta, and cereal |
| 6 | Meat/Poultry | Prepared meats |
| 17 | Alice Mutton | 39 |
| 7 | Produce | Dried fruit and bean curd |
| 8 | Seafood | Seaweed and fish |

As seen on the picture Master records were output (see numbers 1,3,4,5,7,8) i.e. all Master records. Moreover, they are output without Detail records. By default, the property is set to **false**.

## 2.14. Groups

One of the main tasks when rendering reports is grouping the data. Grouping can be used both for the logical separation of data rows and to make a report look better. Two bands are used to create grouped reports: the **GroupHeader** band and the **GroupFooter** band.

The **GroupHeader** band is output in the beginning of each group. The **GroupFooter** band is output in the end of each group. The picture below shows how a report with grouping may look:

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| | | | |
|---|---|---|---|
| **A** | | | |
| Alfreds Futterkiste | Obere Str. 57 | 030-0074321 | Sales Representative |
| Ana Trujillo Emparedados y helados | Avda. de la Constitución 2222 | (5) 555-4729 | Owner |
| Antonio Moreno Taquería | Mataderos 2312 | (5) 555-3932 | Owner |
| Around the Horn | 120 Hanover Sq. | (171) 555-7788 | Sales Representative |
| | | | Count: 4 |
| **B** | | | |
| Berglunds snabbköp | Berguvsvägen 8 | 0921-12 34 65 | Order Administrator |
| Blauer See Delikatessen | Forsterstr. 57 | 0621-08460 | Sales Representative |
| Blondesddsl père et fils | 24, place Kléber | 88.60.15.31 | Marketing Manager |
| Bólido Comidas preparadas | C/ Araquil, 67 | (91) 555 22 82 | Owner |
| Bon app' | 12, rue des Bouchers | 91.24.45.40 | Owner |
| Bottom-Dollar Markets | 23 Tsawassen Blvd. | (604) 555-4729 | Accounting Manager |
| B's Beverages | Fauntleroy Circus | (171) 555-1212 | Sales Representative |
| | | | Count: 7 |
| **C** | | | |
| Cactus Comidas para llevar | Cerrito 333 | (1) 135-5555 | Sales Agent |
| Centro comercial Moctezuma | Sierras de Granada 9993 | (5) 555-3392 | Marketing Manager |
| Chop-suey Chinese | Hauptstr. 29 | 0452-076545 | Owner |
| Comércio Mineiro | Av. dos Lusíadas, 23 | (11) 555-7647 | Sales Associate |
| Consolidated Holdings | Berkeley Gardens 12 Brewery | (171) 555-2282 | Sales Representative |
| | | | Count: 5 |

## 2.14.1. Grouping Conditions

To create a report with grouping it is necessary to define a condition by which the records can be grouped. This condition will be used to divide the data rows into suitable groups, and is set using the Condition property of the GroupHeaderBand.

**Important:** You **MUST** define a condition for every group, otherwise no grouping will take place in the rendered report

For example, if you create a report that generates a list of companies the results could be grouped in alphabetical order by the first letter of the company name. Companies with names starting with A would be in the first group, companies with names starting with B would be in the second group and so on, as in the example below:

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The grouping condition you use can be any valid value. For example, if you wanted the companies to be grouped according to their location you could set the condition to group on a column from the database that contains the necessary location data.

## 2.14.2. GroupHeaderBand

The Group header is created using the **GroupHeader** band, the basic band for rendering reports that use grouping. It is impossible to generate grouped reports without using a **GroupHeader** band.

The **GroupHeader** band is output once at the beginning of each group and typically contains components that display header information such as a group name, date, grouping condition, etc.

To create groups within a report you must specify a grouping condition using the **GroupHeader** band designer or the **Condition** property of the band.

**Note:** The Header band is always output before the **GroupHeader** band, regardless of where bands may be positioned on a page in the designer.

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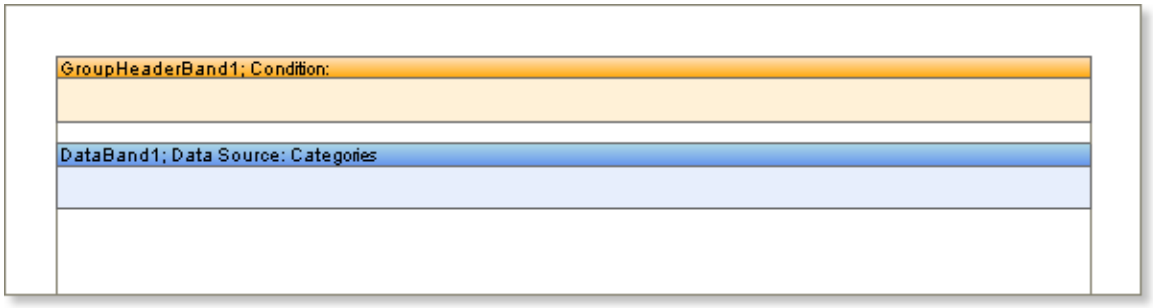


When rendering a report the report generator binds the group header to the specified Data band. The **GroupHeader** band is positioned on a page before the **Data** band that outputs data rows. The **GroupHeader** band always belongs to a specific **Data** band, usually the first **Data** band positioned under the **GroupHeader** band.

You must have a **Data** band to be able to render grouped reports because data rows are output using this band and because those data rows are the basis of the grouping in the report. In addition you can specify the sorting of rows in the **Data** band which will affect the order in which the groups are rendered.

**Important:** To render reports with grouping you **MUST** use a **Data** band.

### 2.14.3. GroupFooterBand

The **GroupFooter** band is commonly used to generate a group footer which is placed after the **Data** band bound to the group and typically contains components that output summary information relating to the group content. Every **GroupFooter** band belongs to the **GroupHeader** band associated with it, and will not be output if there is no associated **GroupHeader** band.

**Note.** The **GroupFooter** band is always output before the **Footer** band regardless of where bands may be positioned on a page.

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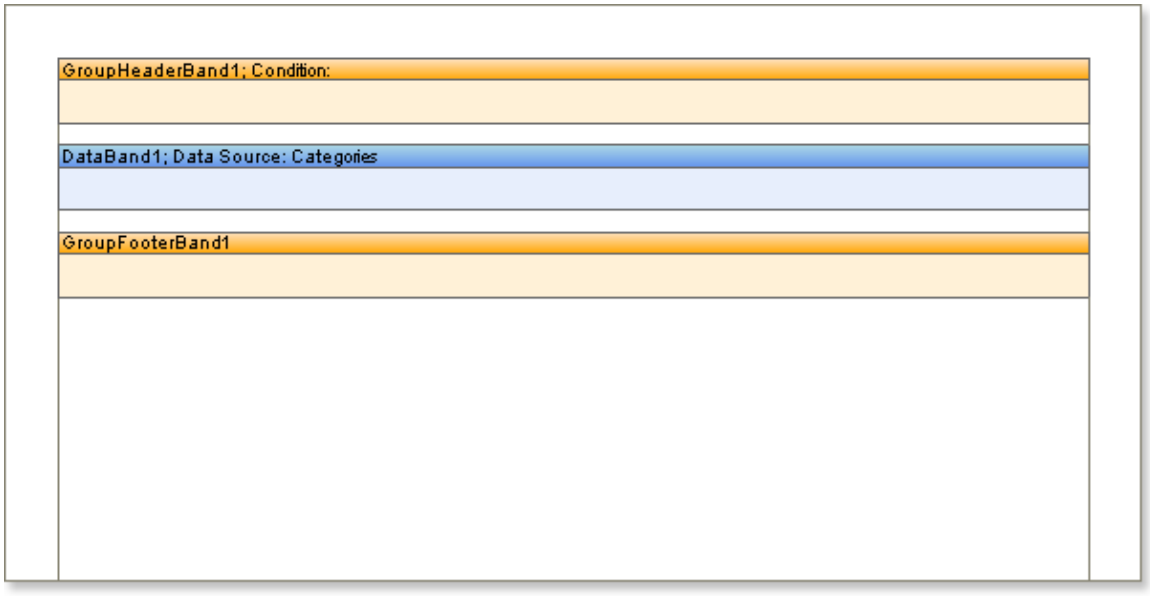


The **GroupFooter** band is used to output information specific to each group. For example, if you want to output the number of rows in a group, it is enough to put a text component on the **GroupFooter** band and assign it the following expression:

```
{Count()}
```

## 2.14.4. Data Sorting in Group

Please note that the report generator automatically sorts the rows of data before grouping. By default sorting by ascending order from A to Z is used. Sorting direction can be changed using the **SortDirection** property. This can take three values: **None**, **Ascending**, **Descending**.
1. **None**. The data will be displayed in order they are put in the data source.
2. **Ascending**. Data are displayed in alphabetical order from A to Z. The picture below shows an example of a report where sorting by ascending order:

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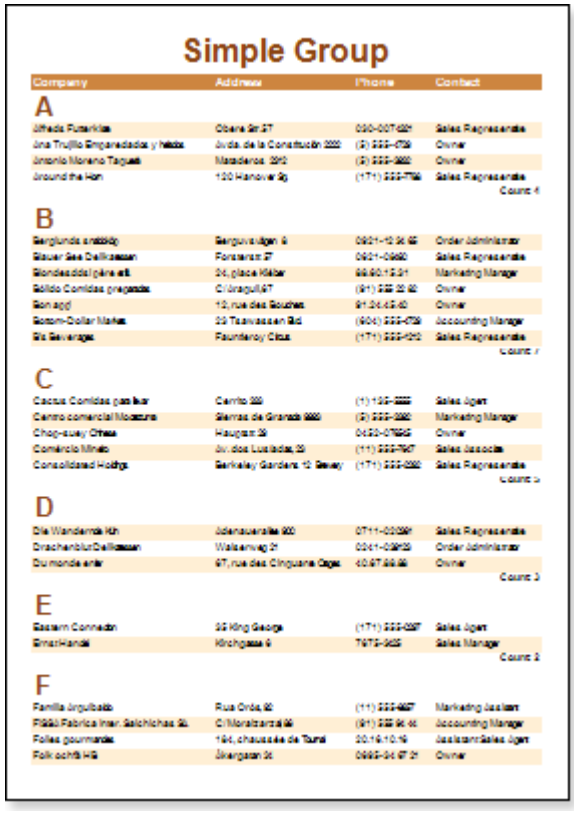

Simple Group

| Company | Address | Phone | Contact |
|---|---|---|---|
| **A** | | | |
| Alfreds Futterkiste | Obere Str 57 | 030-0074321 | Sales Representative |
| Ana Trujillo Emparedados y helados | Avda. de la Constitución 2222 | (5) 555-4729 | Owner |
| Antonio Moreno Taquería | Mataderos 2312 | (5) 555-3932 | Owner |
| Around the Horn | 120 Hanover Sq | (171) 555-7788 | Sales Representative |
| | | | Count: 4 |
| **B** | | | |
| Berglunds snabbköp | Berguvsvägen 8 | 0921-12 34 65 | Order Administrator |
| Blauer See Delikatessen | Forsterstr. 57 | 0621-08460 | Sales Representative |
| Blondesddsl père et fils | 24, place Kléber | 88.60.15.31 | Marketing Manager |
| Bólido Comidas preparadas | C/ Araguil, 67 | (91) 555 22 82 | Owner |
| Bon app' | 12, rue des Bouchers | 91.24.45.40 | Owner |
| Bottom-Dollar Markets | 23 Tsawassen Blvd. | (604) 555-4729 | Accounting Manager |
| B's Beverages | Fauntleroy Circus | (171) 555-1212 | Sales Representative |
| | | | Count: 7 |
| **C** | | | |
| Cactus Comidas para llevar | Cerrito 333 | (1) 135-5555 | Sales Agent |
| Centro comercial Moctezuma | Sierras de Granada 9993 | (5) 555-3392 | Marketing Manager |
| Chop-suey Chinese | Hauptstr. 29 | 0452-076545 | Owner |
| Comércio Mineiro | Av. dos Lusíadas, 23 | (11) 555-7647 | Sales Associate |
| Consolidated Holdings | Berkeley Gardens 12 Brewery | (171) 555-2282 | Sales Representative |
| | | | Count: 5 |
| **D** | | | |
| Die Wandernde Kuh | Adenauerallee 900 | 0711-020361 | Sales Representative |
| DrachenblutDelikatessen | Walserweg 21 | 0241-039123 | Order Administrator |
| Du monde entier | 67, rue des Cinquante Otages | 40.67.88.88 | Owner |
| | | | Count: 3 |
| **E** | | | |
| Eastern Connection | 35 King George | (171) 555-0297 | Sales Agent |
| Ernst Handel | Kirchgasse 6 | 7675-3425 | Sales Manager |
| | | | Count: 2 |
| **F** | | | |
| Familia Arquibaldo | Rua Orós, 92 | (11) 555-9857 | Marketing Assistant |
| FISSA Fabrica Inter. Salchichas S.A. | C/ Moralzarzal, 86 | (91) 555 94 44 | Accounting Manager |
| Folies gourmandes | 184, chaussée de Tournai | 20.16.10.16 | Assistant Sales Agent |
| Folk och fä HB | Åkergatan 24 | 0695-34 67 21 | Owner |

3. **Descending.** Data are displayed in alphabetical order from Z to A. The picture below shows an example of a report where sorting by descending order:

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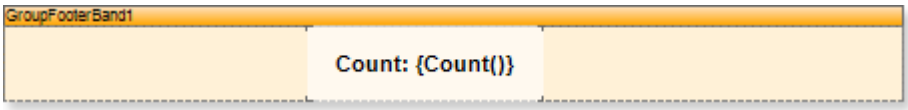
## 2.14.5. GroupFooter

It is enough to place a text component with an aggregate function in a **GroupFooter** to output footer by group. Also, the footer of a group may be placed in a **GroupHeaderBand**. For example, in order to count the number of rows in each group in a **Text** component the following expression can be used:

```
{Count()}
```

A component is placed in the **GroupFooter** band.




After rendering, it is possible to see that in the footer of each group calculation by number of rows is done.

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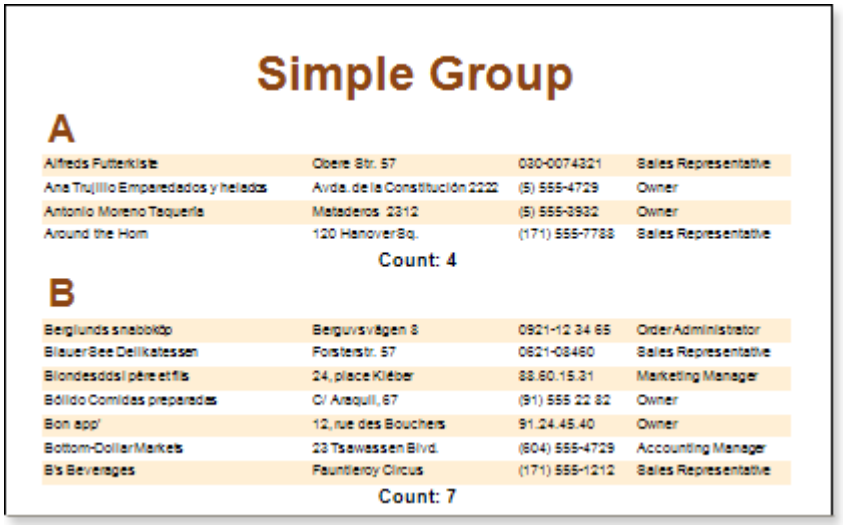
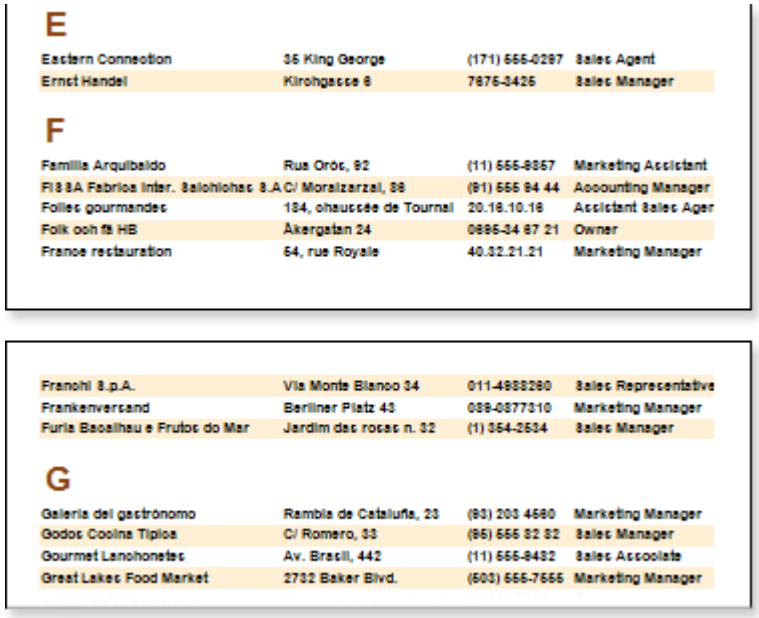



## 2.14.6. KeepGroupTogether Property

When rendering a report with grouping, a group may not fit to one page. I.e. several lines of group will be output on one page and other part on the next page.




This can be avoided using the **KeepGroupTogether** property of the **GroupHeaderBand**. If to set this property to **true**, then, if a group cannot be placed on one page, the whole group is moved to the next page. If it is impossible to print a group on the next page then the group will be forcibly broken and output on multiple pages.

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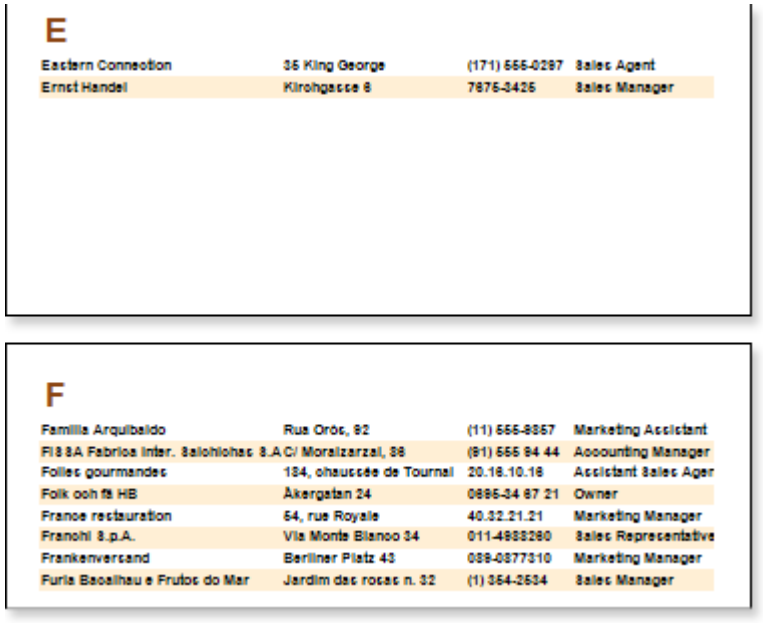


E

| | | | |
|---|---|---|---|
| Eastern Connection | 35 King George | (171) 555-0297 | Sales Agent |
| Ernst Handel | Kirchgasse 6 | 7675-3425 | Sales Manager |



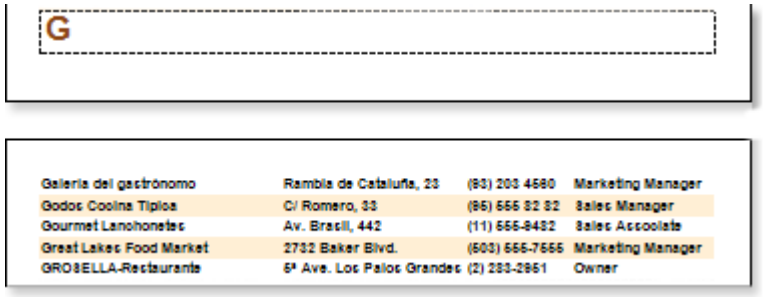
F

| | | | |
|---|---|---|---|
| Familia Arquibaldo | Rua Orós, 92 | (11) 555-9857 | Marketing Assistant |
| FISSA Fabrica Inter. Salchichas S.A. | C/ Moralzarzal, 86 | (91) 555 94 44 | Accounting Manager |
| Folies gourmandes | 184, chaussée de Tournai | 20.16.10.16 | Assistant Sales Ager |
| Folk och fä HB | Åkergatan 24 | 0695-34 67 21 | Owner |
| France restauration | 54, rue Royale | 40.32.21.21 | Marketing Manager |
| Franchi S.p.A. | Via Monte Bianco 34 | 011-4988260 | Sales Representative |
| Frankenversand | Berliner Platz 43 | 089-0877310 | Marketing Manager |
| Furia Bacalhau e Frutos do Mar | Jardim das rosas n. 32 | (1) 354-2534 | Sales Manager |

Work with this property may lead to empty space on page, if groups contain a large number of rows.

## 2.14.7. KeepGroupHeaderTogether Property

The **GroupHeaderBand** has the **KeepHeaderGroupTogether** property. If the property is set to **false**, then the group header can be displayed on one page, and data of a group to another page. So data will be separated from its header. The picture below shows that the header is on one page, and the data were moved to another.



G

| | | | |
|---|---|---|---|
| Galería del gastrónomo | Rambla de Cataluña, 23 | (93) 203 4560 | Marketing Manager |
| Godos Cocina Típica | C/ Romero, 33 | (95) 555 82 82 | Sales Manager |
| Gourmet Lanchonetes | Av. Brazil, 442 | (11) 555-8432 | Sales Associate |
| Great Lakes Food Market | 2732 Baker Blvd. | (503) 555-7555 | Marketing Manager |
| GROSELLA-Restaurante | 5ª Ave. Los Palos Grandes | (2) 283-2951 | Owner |

If the property is set to **true**, then the group header will be displayed with at least one row of a group. The picture below shows how a group will be output if the **KeepHeaderGroupTogether** property is set to true.

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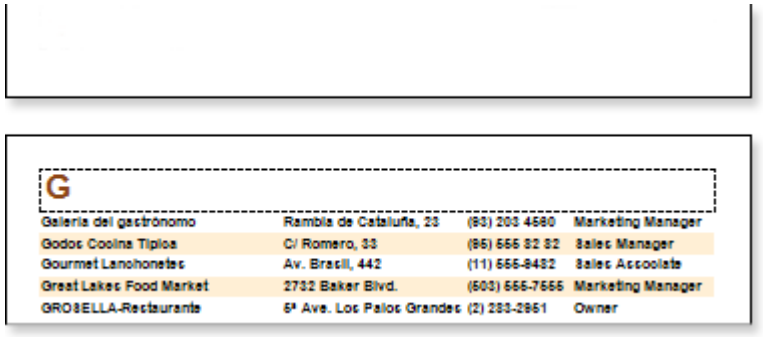
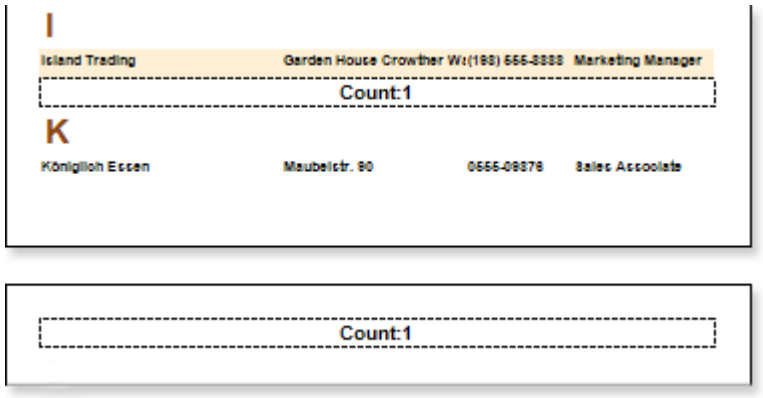



By default the **KeepHeaderGroupTogether** property is set to **true**.

## 2.14.8. KeepGroupFooterTogether Property

The **GroupFooterBand** has the **KeepGroupFooterTogether** property. If the property is set to **false**, then the data can be placed on one page and the footer of a group on another, and data of groups will be separated from its footer:




If the property is set to **true**, then at least one line of data will be together with the footer of a group:

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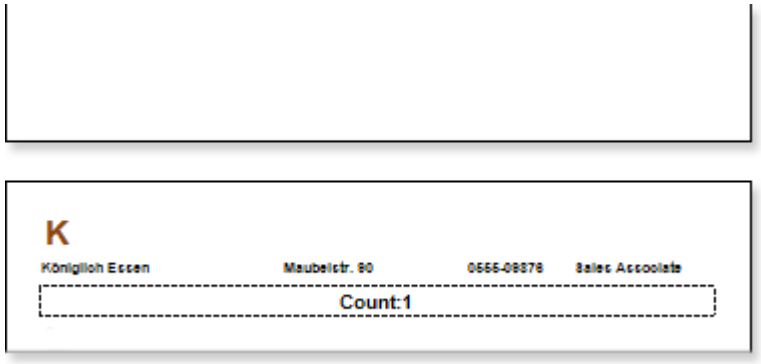


By default this property is set to **true**.

## 2.14.9. Events and GroupHeaderBand

Like the **Data** band, the **Group Header** band has three specific events:

- **BeginRenderEvent**,
- **EndRenderEvent** and
- **RenderingEvent**.

### BeginRenderEvent

The **BeginRenderEvent** is called before a group is rendered, in other words whenever a new group is output. This event can be used for the initialization of data or variables, or for calling certain actions.

### EndRenderEvent

The **EndRenderEvent** is called after the group is output. Usually in the handler for this event data processing and the calculation of totals is done.

### RenderingEvent

The **RenderingEvent** is called when the engine is rendering one data row from a group.

## 2.14.10. Group without GroupHeader

In grouped reports is is usual to display both a group header and a group footer. However, what if you need to output only group footers without group headers?

When creating grouped reports you must use a **GroupHeader** band, but if you do not want it to

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display it can be hidden by setting the height of the **GroupHeader** band to **0** which will cause the report to be rendered successfully but the **GroupHeader** band will not appear in the output.

## 2.14.11. Groups without GroupFooter

In grouped reports is is usual to display both a group header and a group footer. However, what if you need to output only group headers without group footers?

It is possible to simply not include a **GroupFooter**, but this is **NOT** recommended as it can lead to unexpected results particularly if you are working with **Nested** groups. It is therefore recommended that you **ALWAYS** use **GroupHeaders** and **GroupFooters** in pairs.

**Important:** To render reports with grouping you should always use **GroupHeaders** and **GroupFooters** in pairs to avoid the possibility of unexpected results.

If you do not want the **GroupFooter** to be displayed it can be hidden by setting its height to **0** which will cause the report to be rendered successfully but the band will not appear in the output.

## 2.14.12. Nested Groups

When rendering grouped reports you may use more than one grouping to achieve the desired output, known as 'nesting'. For example, you might group Customers by location and then sub group them alphabetically. To achieve this style of report you should put the required number of **GroupHeader** bands before the **DataBand** and ideally the same number of **GroupFooter** bands immediately after it:

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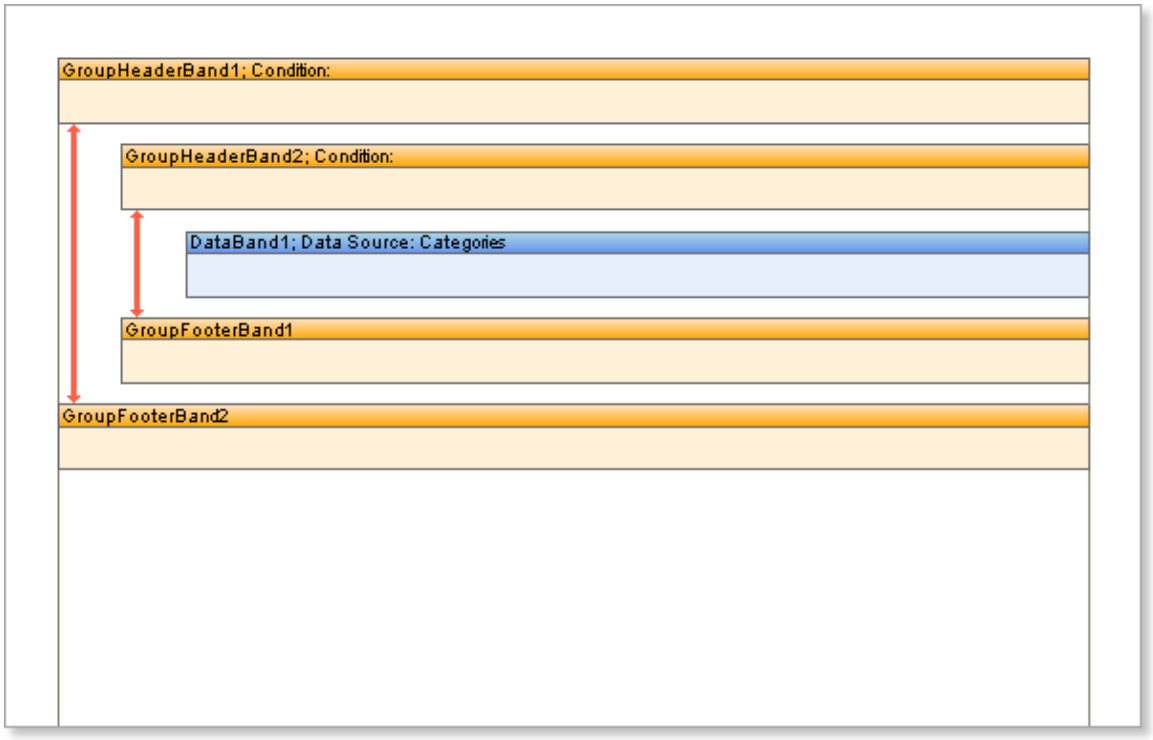


Although it is possible to leave out unwanted **GroupFooters** it is recommended that you always place equal numbers of **GroupHeader** and **GroupFooter** bands on a report to avoid unexpected results. If the number of **GroupFooter** bands is greater than the number of **GroupHeader** bands then the outer ones will be used and the inner bands ignored. If the number of **GroupFooter** bands is less than the number of **GroupHeader** bands, then the **GroupHeader** bands placed closer to the **Data** band will be output without footers.

**Important:** It is recommended to have equal number of **GroupHeader** and **GroupFooter** bands in a report.

In each **GroupHeader** band you must specify the grouping criteria. When rendering the report the **GroupHeader** bands are processed in the in which they appear on a page working from the top down i.e. the topmost band is processed first, then the one that is placed directly underneath it and so on. When placing **GroupFooter** bands on a report page it is important remember that the last **GroupFooter** band is always associated with the first **GroupHeader** band.

## 2.14.13. Numbering Rows in Group

If you wish to display line numbers within a group you should use the **Line** system variable. The reference to this variable should be specified in the expression assigned to a text component placed on the group Data band.

For example, put a text component on the **Data** band and write the following expression in it:

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```
{Line}
```

After the report has been rendered there will be a numbered list of rows in each group, the numbers starting 1.

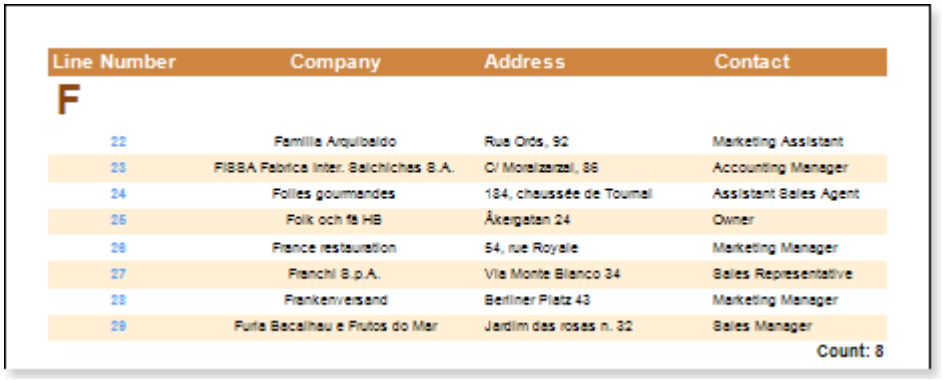
In each new group within a report the numbering starts all over again at 1. If you want the numbers to continue from one group into the next group (known as 'through-numbering') you should use the **LineThrough** system variable instead. For example, write the following expression in the text component:

```
{LineThrough()}
```

As a result the row numbers in the subsequent group will continue from the numbers in the preceding group.

## 2.14.14. LineThrough System Variable

One of the tasks of lines numbering is through numbering in a group. The numbering starts with number 1. Through numbering of lines in a group is defined by the **LineThrough** system variable.



| Line Number | Company | Address | Contact |
|---|---|---|---|
| F | | | |
| 22 | Familia Arquibaldo | Rua Orós, 92 | Marketing Assistant |
| 23 | FISSA Fabrica Inter. Salchichas S.A. | C/ Moralzarzal, 86 | Accounting Manager |
| 24 | Folies gourmandes | 184, chaussée de Tournai | Assistant Sales Agent |
| 25 | Folk och fä HB | Åkergatan 24 | Owner |
| 26 | France restauration | 54, rue Royale | Marketing Manager |
| 27 | Franchi S.p.A. | Via Monte Bianco 34 | Sales Representative |
| 28 | Frankenversand | Berliner Platz 43 | Marketing Manager |
| 29 | Furia Bacalhau e Frutos do Mar | Jardim das rosas n. 32 | Sales Manager |
| | | | Count: 8 |

In other words, when using the **LineThrough** system variable, all rows in the rendered list have an index number and start of printing a new group header does not affect the numbering (numbering does not reset to its initial state equal to 1).

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## 2.14.15. GroupLine System Variable

Numbering of groups in the report generator is defined by the **GroupLine** system variable. Group numbering starts with 1. The picture below shows an example of a report with numbering of groups:

A text component with the **GroupLine** system variable can be placed in the **GroupHeaderBand** band, and in the **GroupFooterBand** band.

## 2.14.16. Combining Groups and Master-Detail Reports

In **Master-Detail** reports it is possible to group both **Master** and **Detail** components. When creating a report, the report generator binds a group header and the **Data** band. The **GroupHeader** is placed on a page above the **Data** band, which outputs data rows. The **GroupHeader** band always refers to a specific **Data** band. Typically, the band is the first **Data** band, which is placed below the **GroupHeader** band. To render a report with the grouping, the **Data** band is required. The **GroupFooter** band is placed below the **Data** band. It is meant that very **Data** band, with what the **GroupHeader** band is bound. Each **GroupFooter** band, refers to a certain **GroupHeader** band.

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The **GroupFooter** band will not be output if there is no the **GroupHeader** band.

The picture above shows a combination of **GroupHeaderBand** and **GroupFooterBand** bands with Data bands in a Master-Detail report.

## 2.15. Report Bands

There are two report bands in Stimulsoft Reports: the **ReportTitleBand** and the **ReportsSummaryBand**. The ReportTitleBand is output in the beginning of a report and the ReportSummaryBand is output in the end of a report.
The number of **ReportTitleBand** bands and **ReportSummaryBand** bands on a page is unlimited.
The **ReportTitleBand** band and the **ReportSummaryBand** band can be output more than one time and can be used on each page.

### 2.15.1. ReportTitleBand

One of the ways to display the report header is the way of using the **ReportTitleBand** band. The report header will be output only once in the beginning of a report. The **ReportTitleBand** band is placed after the **PageHeaderBand** band, **and** before the **HeaderBand** band. The number of **ReportTitleBand** bands on a page is unlimited.

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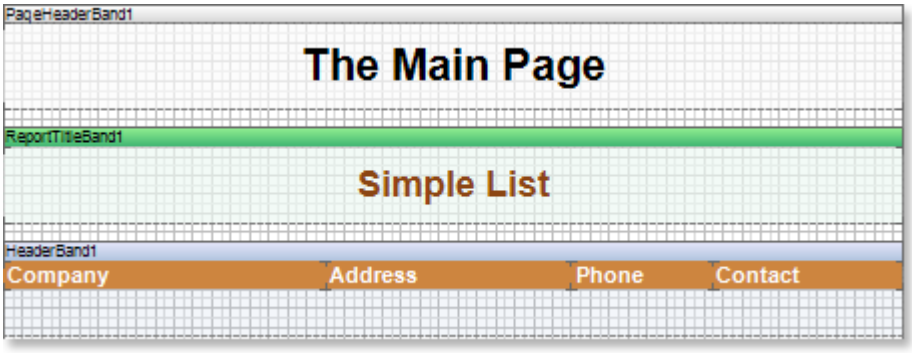
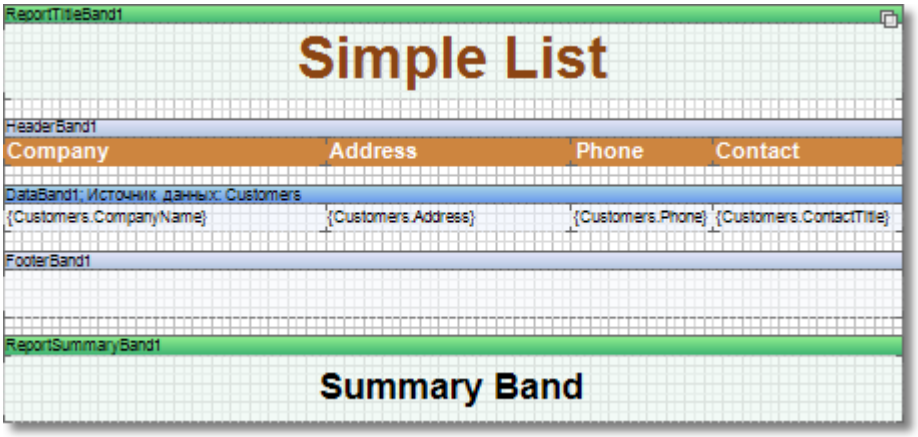



On the picture above shows how bands can be placed on a page. Here one can see top-down the **PageHeaderBand** band, the **ReportTitleBand** band, and the **HeaderBand** band.

## 2.15.2. ReportSummaryBand

A report summary can be output using the **ReportSummaryBand** band. The number of **ReportSummaryBand** bands placed in a report is unlimited. This band is output on each page as many times as there are pages.




This band is used to output report summary.

On the picture above shows how bands can be placed on a page. Here one can see the top-down order of bands:

- The **ReportTitleBand** band;
- The **HeaderBand)** band;
- The **DataBand)** band;
- The **FooterBand)** band;
- The **ReportSummaryBand)** band.

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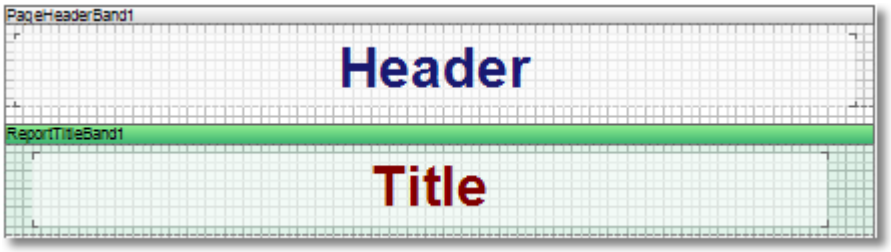
## 2.15.3. ReportTitleBand Property

By default, the **PageHeaderBand** band is placed above the **ReportTitleBand** band:

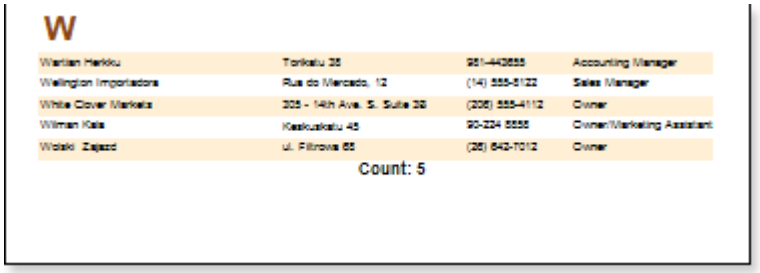



but it is also possible to output the **ReportTitleBand** band before the **PageHeaderBand** band:

By default this property is set to **false**. Set the **TitleBeforeHeader** property to **true** and the **ReportTitleBand** band will be output before the **PageHeaderBand** band.

## 2.15.4. KeepReportSummaryTogether Property

When printing, sometimes the last data row will be on one page and the report summary on the next one. The report will not look good.

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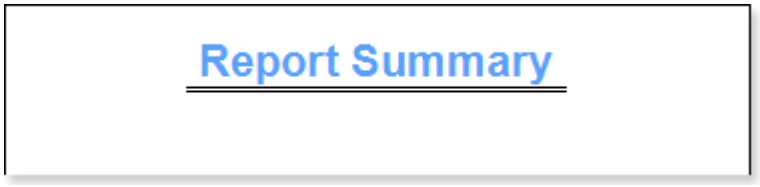


To avoid such unpleasant incidents the **ReportSummaryBand** has the **KeepReportSummaryTogether** property.
If the **KeepReportSummaryTogether** property is set to **true**, then minimum one data row will be printed with the report summary. Thus it is necessary to take into account that after the data row is transferred free space may remain on a fist page. Therefore, one should take this into account when working with this property.

The default value of the property is set to **true**.

## 2.15.5. PrintAtBottom Property

Suppose there is a report in which data covers only one-third of the last page. The report summary is displayed after the data.

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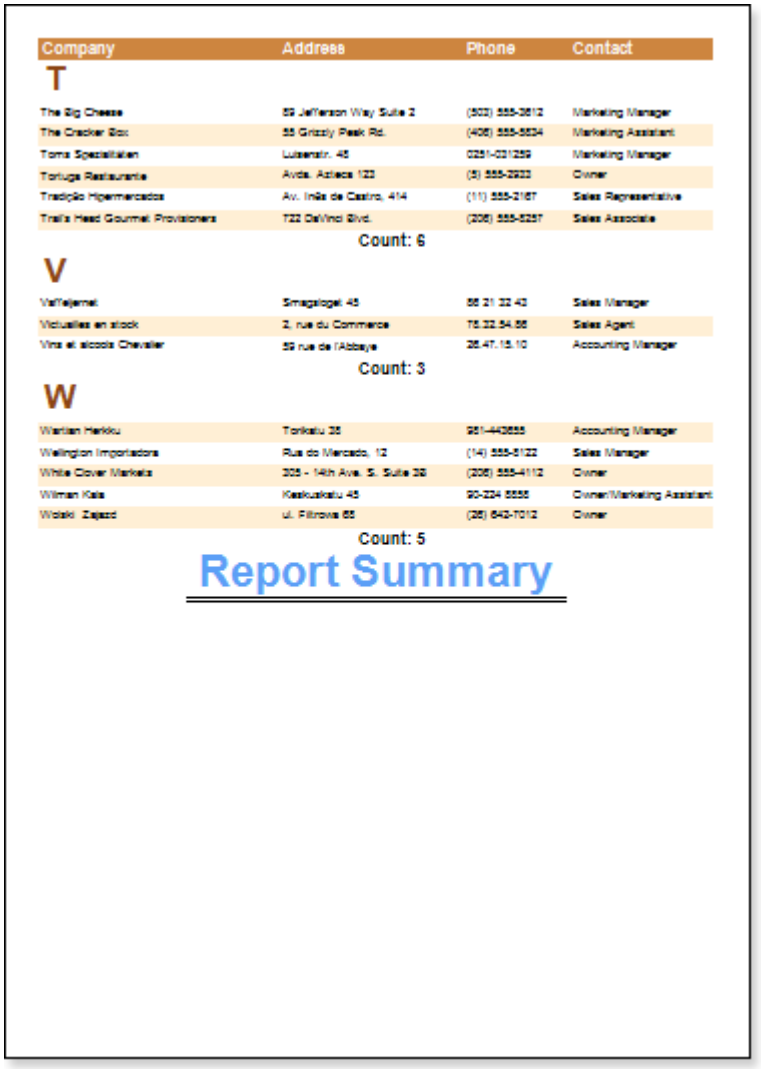


But it is necessary that the report summary should be placed on the bottom of the page. The **ReportSummaryBand** has the **PrintAtBottom** property. By default, the property is set to **false**. If the **PrintAtBottom** property is set to **true**, then summary will be output on the bottom of the page.

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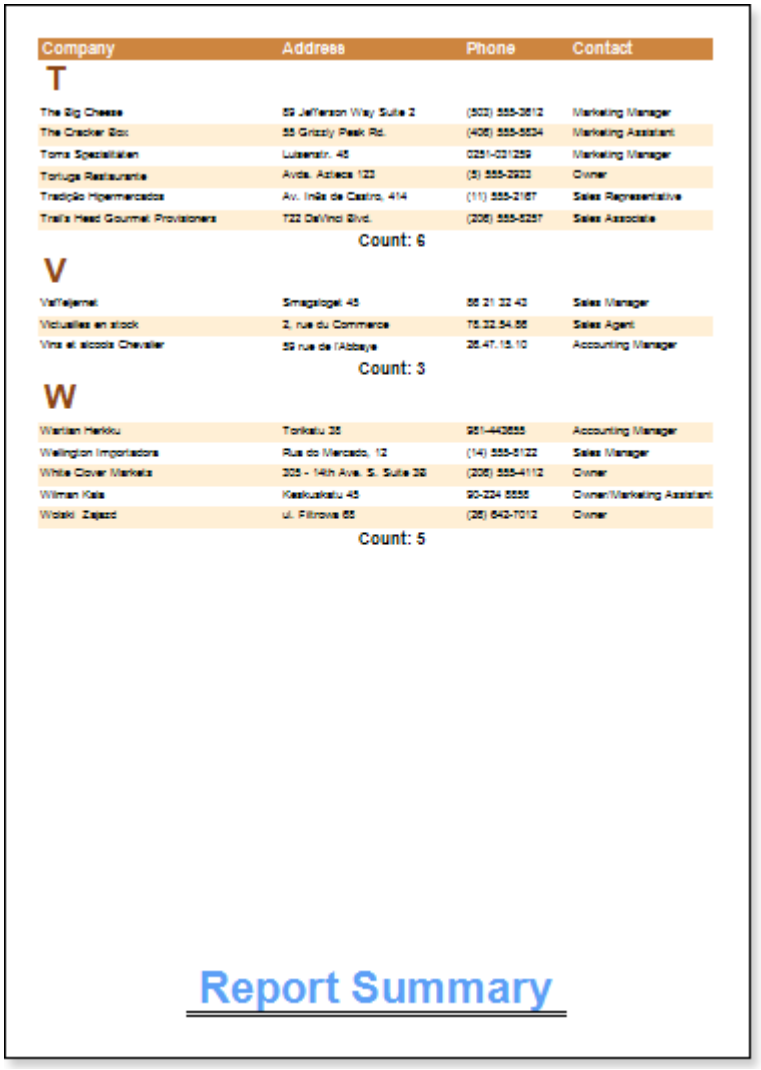


## 2.15.6. Print If Empty Property

There is a property in a report generator that allows you to display a report header and/or report footer when the DataBand is not on a page or data of a report. This is the **Print If Empty** property, which have both the **ReportTitleBand**, and the **ReportSummaryBand**.

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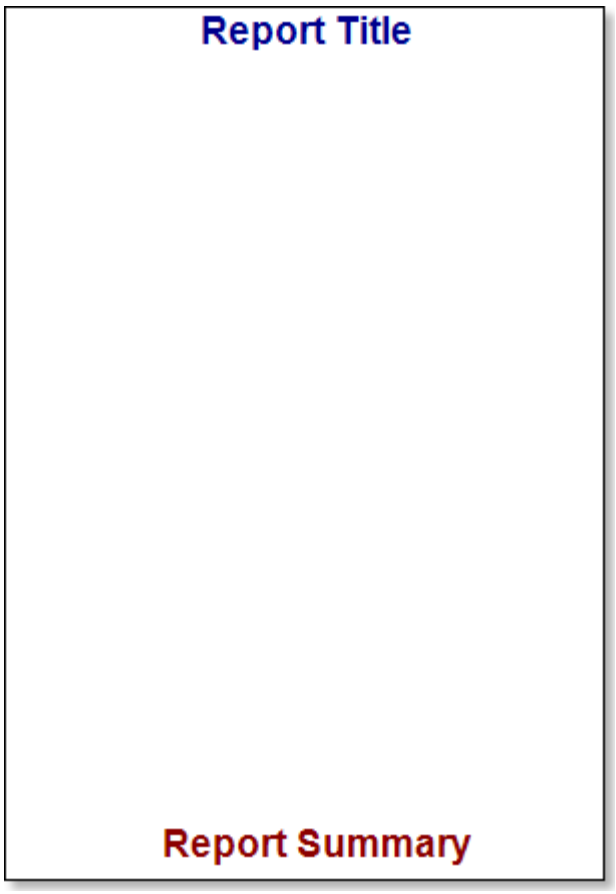


By default, this property is enabled. If you disable this property for two bands, you get a blank page.

Note that in this example, in addition to the **Print If Empty** property, the **Print At Bottom** property of the **ReportSummaryBand** band is also set.

## 2.16. Page Bands

Page bands are printed at the top or bottom of a page. Usually they are used to output things like page numbering, copyright notices, company address and contact information etc. Stimulsoft Reports supports three types of page bands: **PageHeader**, **PageFooter**, and **EmptyData**.

### 2.16.1. PageHeader Band

The PageHeader band is used to output information such as page numbers, dates, and company information at the top of a page. The PageHeader band is output at the top of every page of the report. An unlimited number of PageHeader bands can be placed on a page.

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**Note:** The number of PageHeader bands that can be placed on a page is effectively unlimited other than by available space.

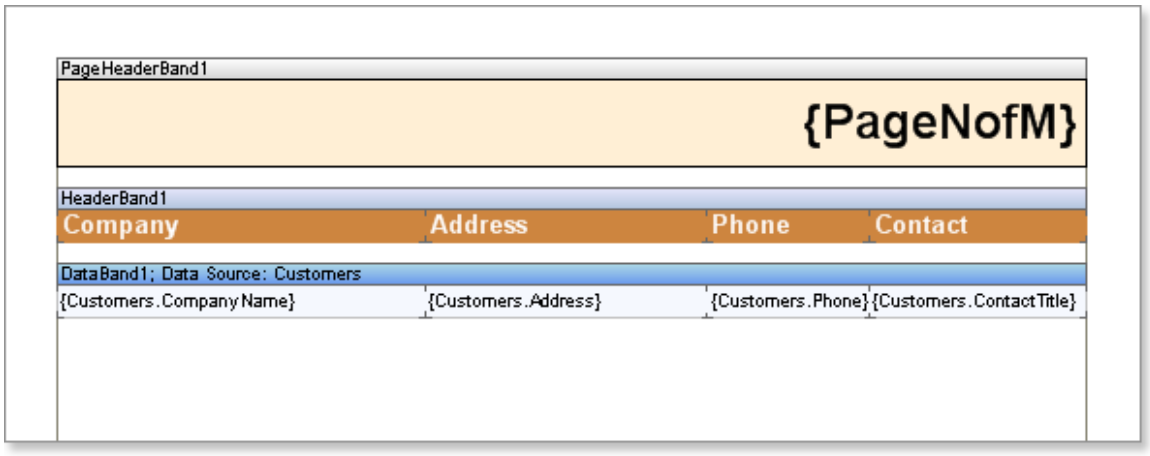
Example

Create a new report and drop three bands on a page: a PageHeader band for the current page number and number of pages in the report, a Data band to output data and a HeaderBand band to output data column headers. Drop a text component on the PageHeader band and enter the following expression in the Text Property Editor:

```
{PageNofM}
```

**Note:** If you prefer instead of typing the expression it is possible to select it from the System Variables in the Expression Editor.

The result should look something like this:




Now run the report, and you will see that the page number is printed at the top of each page.

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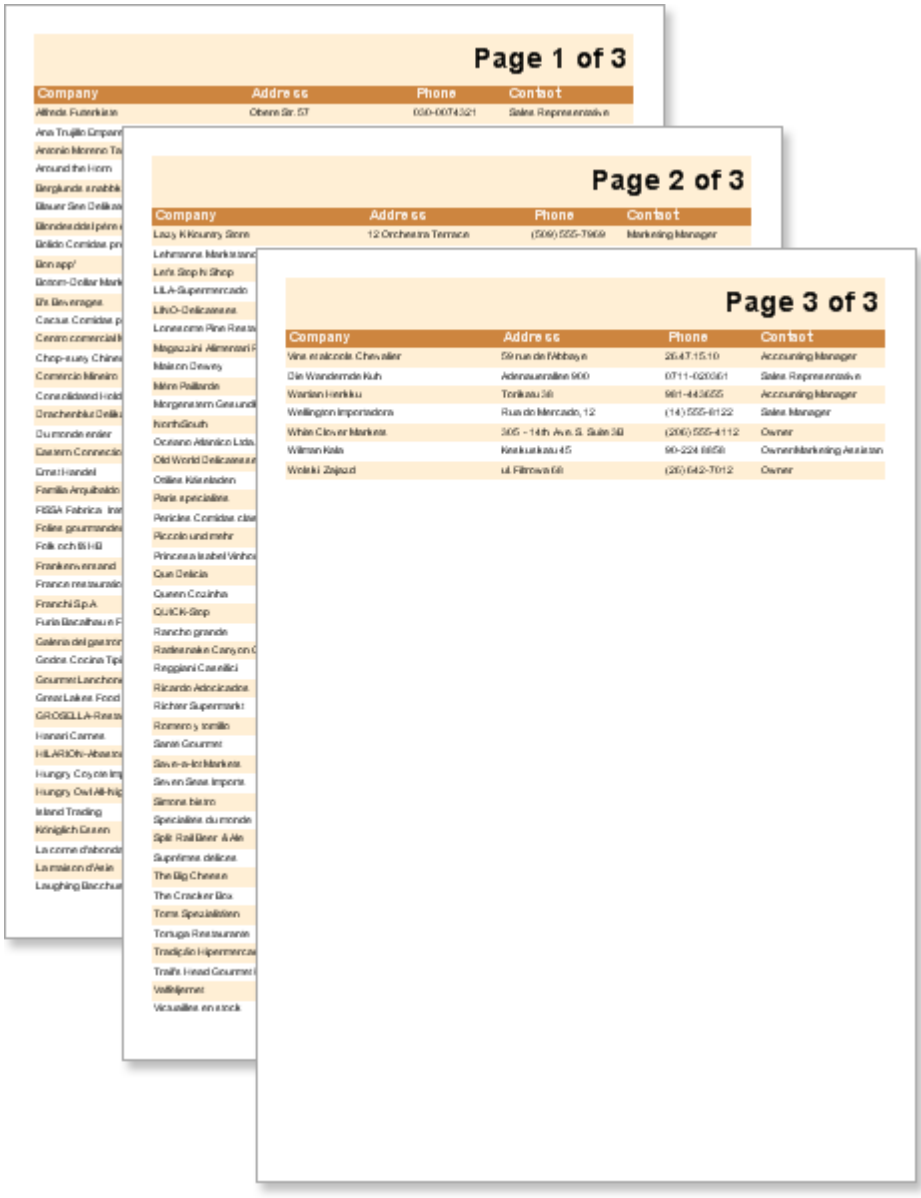


## 2.16.2. PageFooter Band

The PageFooter band is used to output information such as page numbers, dates, and company information at the bottom of a page. The PageFooter band is output at the bottom of every page of the report. An unlimited number of PageFooter bands can be placed on a page.

**Note:** The number of PageFooter bands that can be placed on a page is effectively unlimited other than by available space.

Example

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Create a new report and drop three bands on a page: a PageFooter band for the current page number and number of pages in the report, a Data band to output data and a HeaderBand band to output data column headers. Drop a text component on the PageFooter band and enter the following expression in the Text Property Editor:

```
{PageNofM}
```

**Note:** If you prefer instead of typing the expression it is possible to select it from the System Variables in the Expression Editor.

The result should look something like this:

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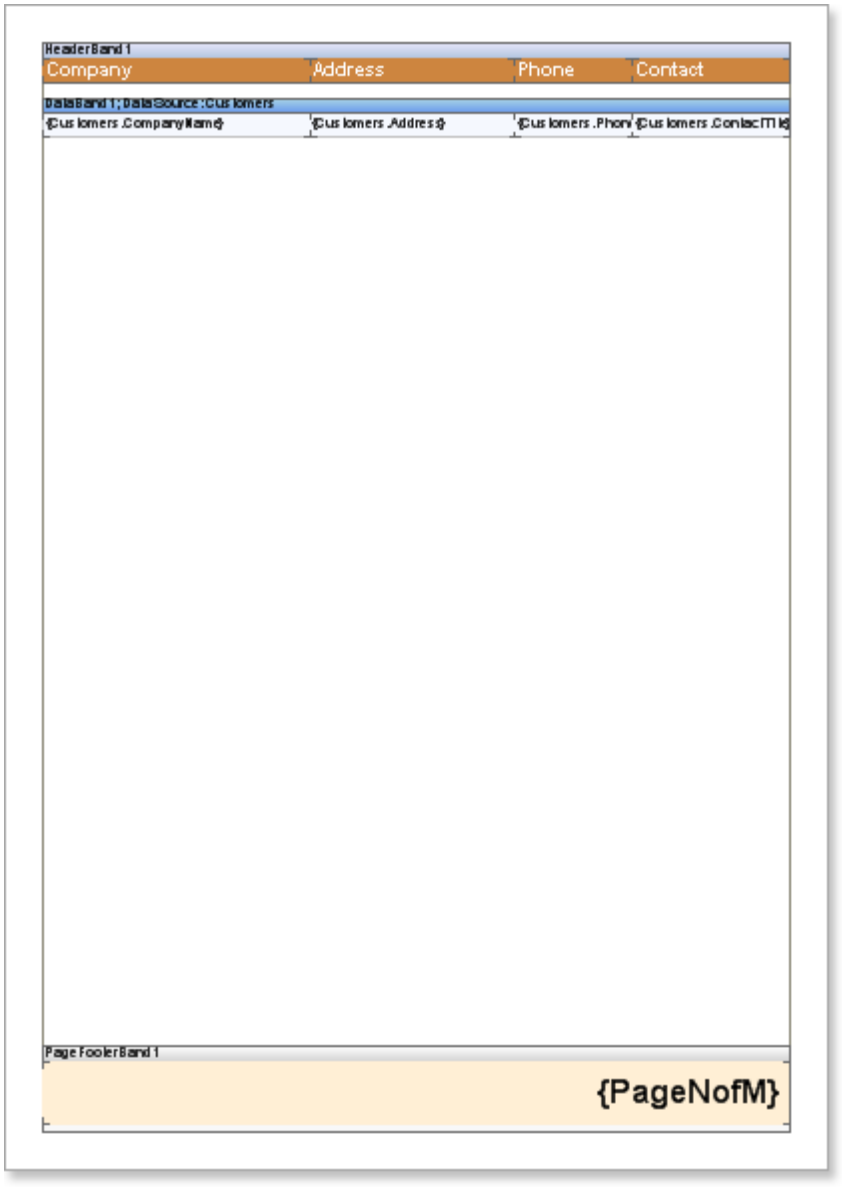


Now run the report, and you will see that the page number is printed at the bottom of each page.

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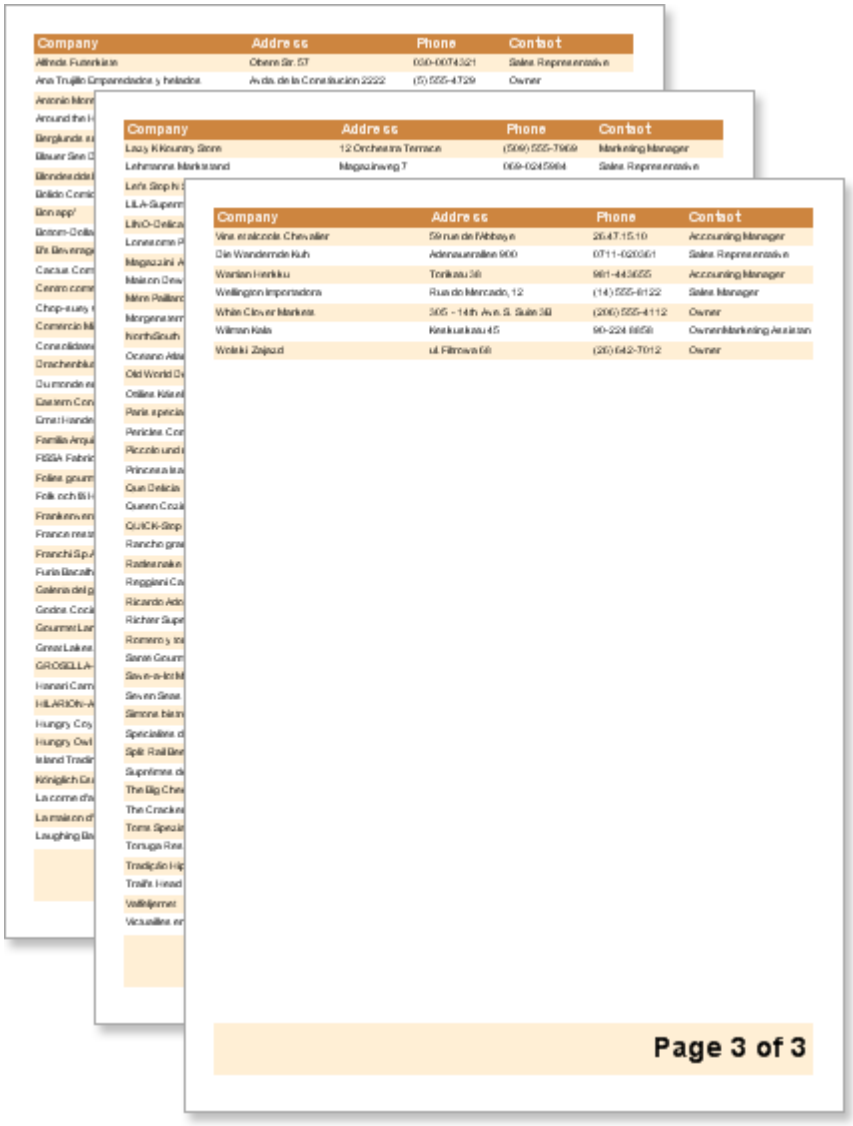


## 2.16.3. PrintOnEvenOddPages Property

The **PrintOnEvenOddPages** property is used to print headers and footers on even/odd pages, for **PageHeaderBands** and **PageFooterBands**.

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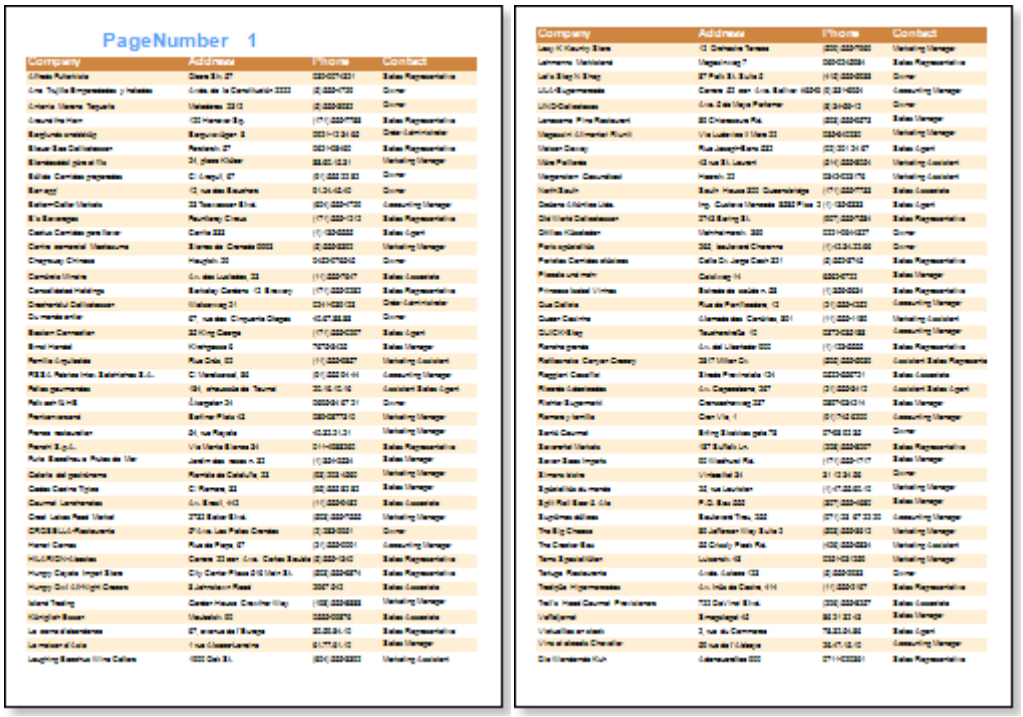
The picture above shows a sample of a report with the **PrintOnEvenOddPages** property of the **PageHeaderBand** set to **EvenPage**.




The picture above shows a sample of a report with the **PrintOnEvenOddPages** property of the **PageHeaderBand** set to **OddPage**.

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Three values are available for this property:

- **Ignore**. Bands are printed on all pages;
- **PrintOnEvenPages**. Bands are printed on even pages;
- **PrintOnOddPage**. Bands are printed on odd pages.

## 2.17. Columns

Stimulsoft Reports has ability to group data in columns. Data output in columns allows making better the report appearance. It also allows using page space more efficiently. Two types of columns are supported: columns and columns on a **Data** band. Columns on a **Data** band supports two modes: **Across Then Down** and **Down Then Across**. So Stimulsoft Reports has full set of instruments to render reports with columns.

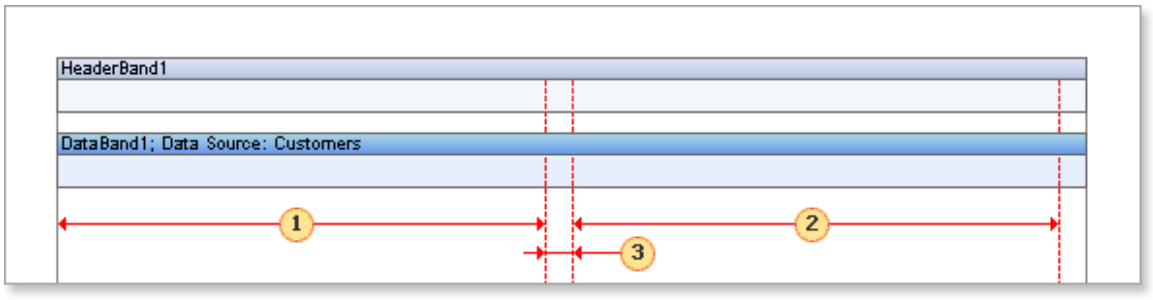
### 2.17.1. Columns on Page

It is possible to output data on a page in columns. The Column property of a page is used to output data in columns. By default this property is 0. If to set this property to 2 or more then data will be output in columns. Also it is necessary to change 2 properties: **ColumnWidth** and **ColumnGaps**. The **ColumnWidth** property is used to set the column width.

| 3. Columns | |
|---|---|
| Columns | 2 |
| Column Width | 9,5 |
| Column Gaps | 0 |
| Right to Left | False |

This width is true to all columns which will be output on a page. The **ColumnGaps** property is used to set the interval between two columns.

**Notice.** Two properties of a page should be set to output data in columns. The **Columns** property defines the number of columns. The **ColumnWidth** property defines the column width.




1 The first column width

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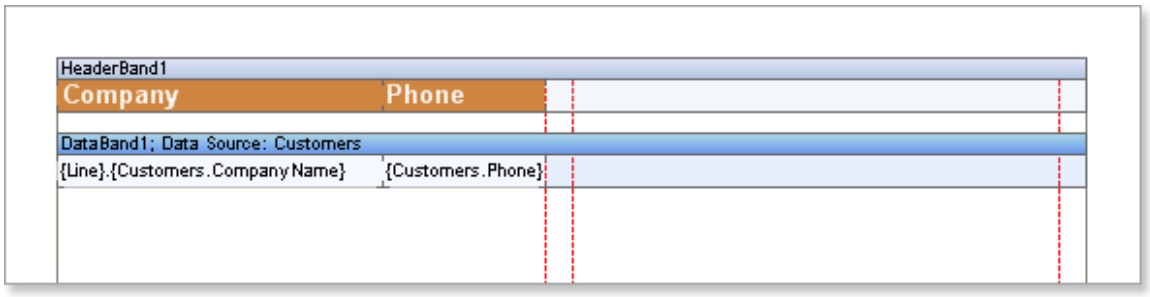
2. The second column width
3. The interval between columns

In the column output mode the page is separated vertically on some small pages. And a report is logically output in the first column, then in the second etc.

**Notice.** The number of columns on a page is unlimited.

For example, it is necessary to build a report with columns. Set the Column property to 2 (this means that two columns will be output on a page). Set the **ColumnWidth** of one column and in the **ColumnGaps** property set the interval between columns. Put two bands on a page: the **Data** band and the **Header** band. Title of report will be output on the **Header** band and data will be output on the **Data** band.

**Notice.** Column borders are specified with the red line.




Run the report. There are two columns on a page. All lines are numbered.

| Company | Phone |
|---|---|
| 1.Alfreds Futterkiste | 030-0074321 |
| 2.Ana Trujillo Emparedados y helados | (5) 555-4729 |
| 3.Antonio Moreno Taquería | (5) 555-3932 |
| 4.Around the Horn | (171) 555-7788 |
| 5.Berglunds snabbköp | 0921-12 34 65 |
| 6.Blauer See Delikatessen | 0621-08460 |
| 7.Blondesddsl père et fils | 88.60.15.31 |
| 8.Bólido Comidas preparadas | (91) 555 22 82 |
| 9.Bon app' | 91.24.45.40 |
| 10.Bottom-Dollar Markets | (604) 555-4729 |
| 11.B's Beverages | (171) 555-1212 |
| 12.Cactus Comidas para llevar | (1) 135-5555 |
| 13.Centro comercial Moctezuma | (5) 555-3392 |
| 14.Chop-suey Chinese | 0452-076545 |
| 15.Comércio Mineiro | (11) 555-7647 |
| 16.Consolidated Holdings | (171) 555-2282 |
| 17.Die Wandernde Kuh | 0711-020361 |
| 18.Drachenblut Delikatessen | 0241-039123 |
| 19.Du monde entier | 40.67.88.88 |
| 20.Eastern Connection | (171) 555-0297 |

| Company | Phone |
|---|---|
| 46.Let's Stop N Shop | (415) 555-5938 |
| 47.LILA-Supermercado | (9) 331-6954 |
| 48.LINO-Delicateses | (8) 34-56-12 |
| 49.Lonesome Pine Restaurant | (503) 555-9573 |
| 50.Magazzini Alimentari Riuniti | 035-640230 |
| 51.Maison Dewey | (02) 201 24 67 |
| 52.Mère Paillarde | (514) 555-8054 |
| 53.Morgenstern Gesundkost | 0342-023176 |
| 54.North/South | (171) 555-7733 |
| 55.Océano Atlántico Ltda. | (1) 135-5333 |
| 56.Old World Delicatessen | (907) 555-7584 |
| 57.Ottilies Käseladen | 0221-0644327 |
| 58.Paris spécialités | (1) 42.34.22.66 |
| 59.Pericles Comidas clásicas | (5) 552-3745 |
| 60.Piccolo und mehr | 6562-9722 |
| 61.Princesa Isabel Vinhos | (1) 356-5634 |
| 62.Que Delícia | (21) 555-4252 |
| 63.Queen Cozinha | (11) 555-1189 |
| 64.QUICK-Stop | 0372-035188 |
| 65.Rancho grande | (1) 123-5555 |

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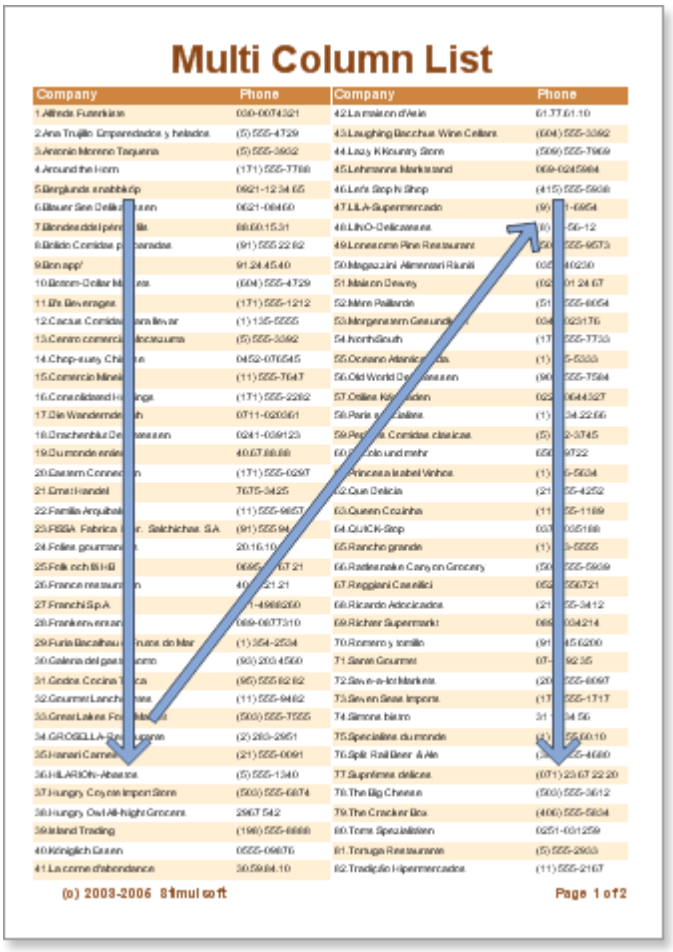
Columns are output on the following way. Stimulsoft Reports prints bands until there is a free space on a page. Then, instead of creating a new page, a new column is added and data is output in a new column until there is a free space.




## 2.17.2. Columns on Data Band

Columns have one disadvantage. Sometimes data can be enough only for one column. As a result other columns will stay empty. So some part of a page will stay unused. It is possible to output columns using the **Data** band. The **Columns** property of the **Data** band is used to enable output data in columns. Set this property to 2 and more. In this case it is necessary to set the **ColumnWidth** and **ColumnGaps** properties. The **ColumnWidth** property is used to set the column width. This width is true to all columns on the **Data** band. The **ColumnGaps** property is used to set the interval between two columns.

**Notice.** Two properties of the **Data** band should be set to output columns on a band. The **Columns** property is used to define number of columns. The **ColumnWidth** property is used to set the column width.

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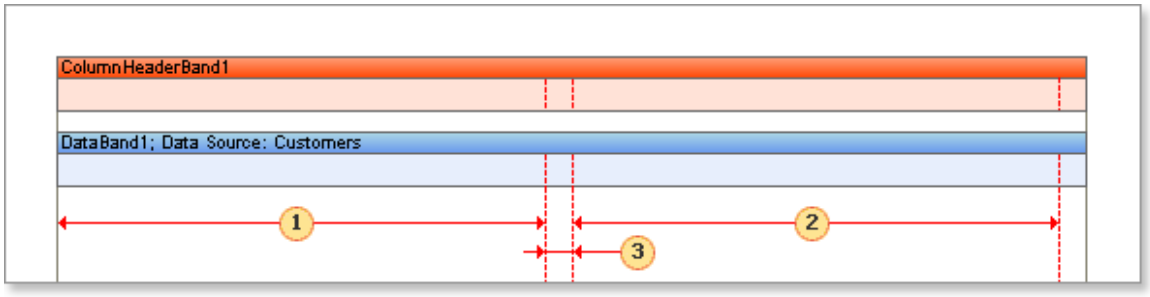


1. The first column width
2. The second column width
3. Interval between columns

**Notice.** Number of columns on the **Data** band is unlimited.

There are two modes to output columns on the **Data** band. They are **AcrossThenDown** and **DownThenAcross**.

### 2.17.2.1. AcrossThenDown Mode

This mode is used to output rows logically on the **Data** band from left to right. And rows are output: one row in one column. When all rows will be output in columns on the **Data** band then a new **Data** band will be formed and again all rows in columns will be output. So, data will take as much space as it is necessary.

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**Notice.** Number of columns on the **Data** band is unlimited.

Build a report with columns. Render a report with three columns on the **Data** band. Put two bands on a page: The **Data** band and the **ColumnHeader** band. Then set the **Column** property to 3 (this means three columns). Set the column width using the **ColumnWidth** property. And set interval between columns using the **ColumnGaps** property. Put text components on the **ColumnHeader** band. Column names will be output in text components. Data will be output on the **Data** band. Set the **ColumnDirection** property of the **Data** band to **AcrossThenDown** mode.

**Notice.** Column edges are indicated with red vertical lines. All components which are placed on the first column are shown in other columns.

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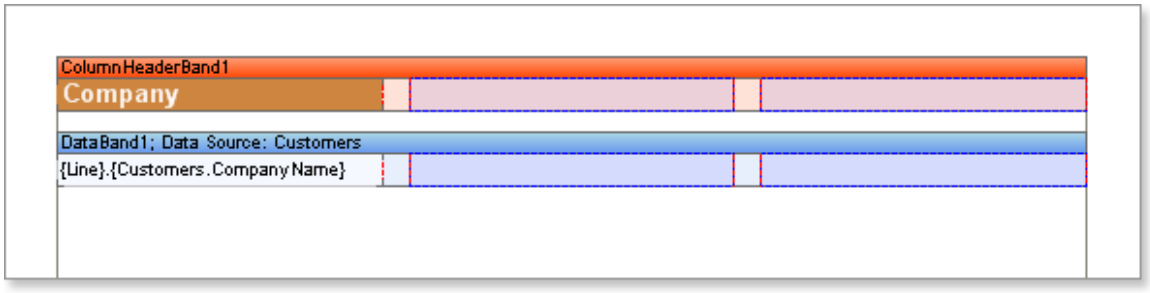


Run the report. It is very easy to see the direction of data output.

| Company | Company | Company |
|---|---|---|
| 1.Alfreds Futterkiste | 2.Ana Trujillo Emparedados y helados | 3.Antonio Moreno Taquería |
| 4.Around the Horn | 5.Berglunds snabbköp | 6.Blauer See Delikatessen |
| 7.Blondesddsl père et fils | 8.Bólido Comidas preparadas | 9.Bon app' |
| 10.Bottom-Dollar Markets | 11.B's Beverages | 12.Cactus Comidas para llevar |
| 13.Centro comercial Moctezuma | 14.Chop-suey Chinese | 15.Comércio Mineiro |
| 16.Consolidated Holdings | 17.Die Wandernde Kuh | 18.Drachenblut Delikatessen |
| 19.Du monde entier | 20.Eastern Connection | 21.Ernst Handel |
| 22.Familia Arquibaldo | 23.FISSA Fabrica Inter. Salchichas S.A | 24.Folies gourmandes |
| 25.Folk och fä HB | 26.France restauration | 27.Franchi S.p.A. |
| 28.Frankenversand | 29.Furia Bacalhau e Frutos do Mar | 30.Galería del gastrónomo |
| 31.Godos Cocina Típica | 32.Gourmet Lanchonetes | 33.Great Lakes Food Market |
| 34.GROSELLA-Restaurante | 35.Hanari Carnes | 36.HILARION-Abastos |
| 37.Hungry Coyote Import Store | 38.Hungry Owl All-Night Grocers | 39.Island Trading |
| 40.Königlich Essen | 41.La corne d'abondance | 42.La maison d'Asie |
| 43.Laughing Bacchus Wine Cellars | 44.Lazy K Kountry Store | 45.Lehmanns Marktstand |
| 46.Let's Stop N Shop | 47.LILA-Supermercado | 48.LINO-Delicateses |
| 49.Lonesome Pine Restaurant | 50.Magazzini Alimentari Riuniti | 51.Maison Dewey |
| 52.Mère Paillarde | 53.Morgenstern Gesundkost | 54.North/South |
| 55.Océano Atlántico Ltda. | 56.Old World Delicatessen | 57.Ottilies Käseladen |
| 58.Paris spécialités | 59.Pericles Comidas clásicas | 60.Piccolo und mehr |
| 61.Princesa Isabel Vinhos | 62.Que Delícia | 63.Queen Cozinha |

### 2.17.2.2. DownThenAcross Mode

**AcrossThenDown** mode has a weakness. It is not convenient to read information on a page, because data are output from left to right and then down. It is much better when columns are output using the **DownThenAcross** mode. In this mode the first column is output first then the second etc.

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When using the **DownThenAcross** mode, the report generator tries to distribute evenly all data rows in columns. When all data rows are distributed between columns the first column is output. And the first column may not be output to the bottom of a page, because all data are distributed evenly. After the first column was output the second column is output etc. So data will take as much space on a page as it is required. And data will be represented in convenient readable form (unlike the **AcrossThenDown** mode.

**Notice.** Number of columns on the **Data** band is unlimited.

Build a report with columns in the **Down Then Across** mode. Put two bands on a page: The **Data** band and the **ColumnHeader** band. Then set the **Column** property to 3 (this means three columns). Set the column width using the **ColumnWidth** property. And set interval between columns using the **ColumnGaps** property. Put text components on the **ColumnHeader** band. Column names will be output in text components. Data will be output on the **Data** band. Set the

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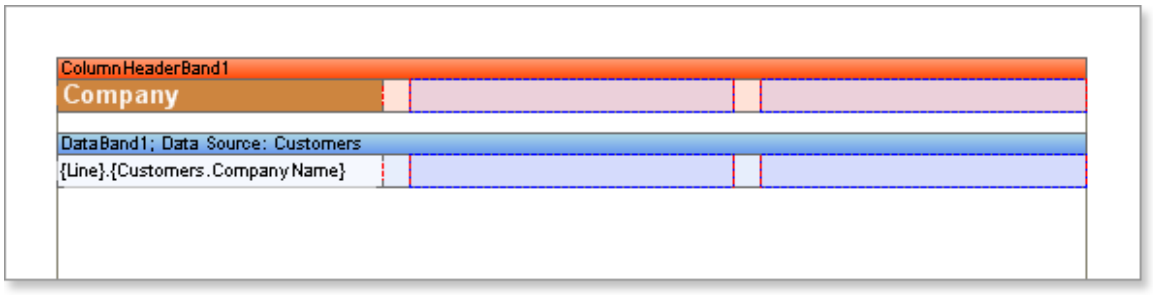
**ColumnDirection** property of the **Data** band to **DownThenAcross** mode.

**Notice.** Column edges are indicated with red vertical lines. All components which are placed on the first column are shown in other columns.




Run the report. The report generator tried to distribute evenly all data rows between all three columns. There are 31 rows in the first column, 31 in the second one, and 29 in the third. All information is readable top-down and from left to right.

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| Company | Company | Company |
|---|---|---|
| 1.Alfreds Futterkiste | 32.Gourmet Lanchonetes | 63.Queen Cozinha |
| 2.Ana Trujillo Emparedados y helados | 33.Great Lakes Food Market | 64.QUICK-Stop |
| 3.Antonio Moreno Taquería | 34.GROSELLA-Restaurante | 65.Rancho grande |
| 4.Around the Horn | 35.Hanari Carnes | 66.Rattlesnake Canyon Grocery |
| 5.Berglunds snabbköp | 36.HILARION-Abastos | 67.Reggiani Caseifici |
| 6.Blauer See Delikatessen | 37.Hungry Coyote Import Store | 68.Ricardo Adocicados |
| 7.Blondesddsl père et fils | 38.Hungry Owl All-Night Grocers | 69.Richter Supermarkt |
| 8.Bólido Comidas preparadas | 39.Island Trading | 70.Romero y tomillo |
| 9.Bon app' | 40.Königlich Essen | 71.Santé Gourmet |
| 10.Bottom-Dollar Markets | 41.La corne d'abondance | 72.Save-a-lot Markets |
| 11.B's Beverages | 42.La maison d'Asie | 73.Seven Seas Imports |
| 12.Cactus Comidas para llevar | 43.Laughing Bacchus Wine Cellars | 74.Simons bistro |
| 13.Centro comercial Moctezuma | 44.Lazy K Kountry Store | 75.Spécialités du monde |
| 14.Chop-suey Chinese | 45.Lehmanns Marktstand | 76.Split Rail Beer & Ale |
| 15.Comércio Mineiro | 46.Let's Stop N Shop | 77.Suprêmes délices |
| 16.Consolidated Holdings | 47.LILA-Supermercado | 78.The Big Cheese |
| 17.Die Wandernde Kuh | 48.LINO-Delicateses | 79.The Cracker Box |
| 18.Drachenblut Delikatessen | 49.Lonesome Pine Restaurant | 80.Toms Spezialitäten |
| 19.Du monde entier | 50.Magazzini Alimentari Riuniti | 81.Tortuga Restaurante |
| 20.Eastern Connection | 51.Maison Dewey | 82.Tradição Hipermercados |
| 21.Ernst Handel | 52.Mère Paillarde | 83.Trail's Head Gourmet Provisioners |
| 22.Familia Arquibaldo | 53.Morgenstern Gesundkost | 84.Vaffeljernet |
| 23.FISSA Fabrica Inter. Salchichas S.A. | 54.North/South | 85.Victuailles en stock |
| 24.Folies gourmandes | 55.Océano Atlántico Ltda. | 86.Vins et alcools Chevalier |
| 25.Folk och fä HB | 56.Old World Delicatessen | 87.Wartian Herkku |
| 26.France restauration | 57.Ottilies Käseladen | 88.Wellington Importadora |
| 27.Franchi S.p.A. | 58.Paris spécialités | 89.White Clover Markets |
| 28.Frankenversand | 59.Pericles Comidas clásicas | 90.Wilman Kala |
| 29.Furia Bacalhau e Frutos do Mar | 60.Piccolo und mehr | 91.Wolski Zajazd |
| 30.Galería del gastrónomo | 61.Princesa Isabel Vinhos | |
| 31.Godos Cocina Típica | 62.Que Delícia | |

### 2.17.2.3. Minimal Number of Lines in Column

When using the **DownThenAcross** column mode, the following situation may occur. For example, there are too few rows are output in a report, for example - five. In this case data will be distributed equally between all columns. In some cases it is necessary do not distribute data rows equally by all columns. And for better visualization, all data rows should be output in one column.

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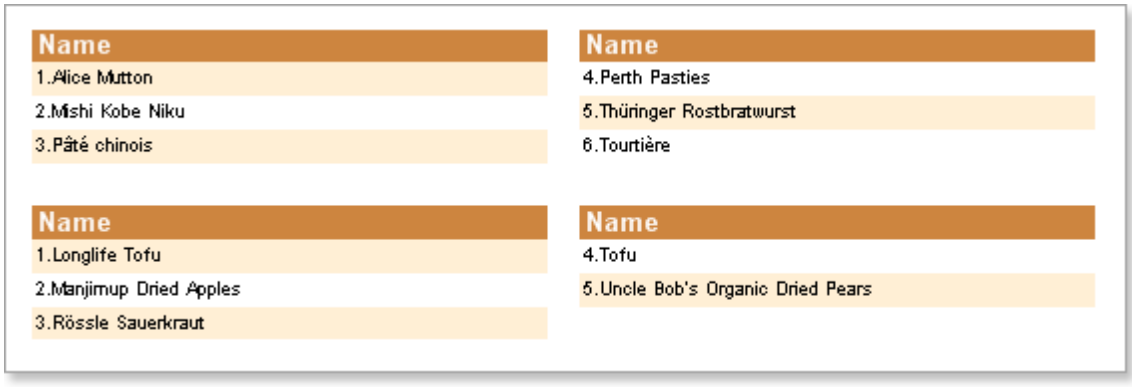


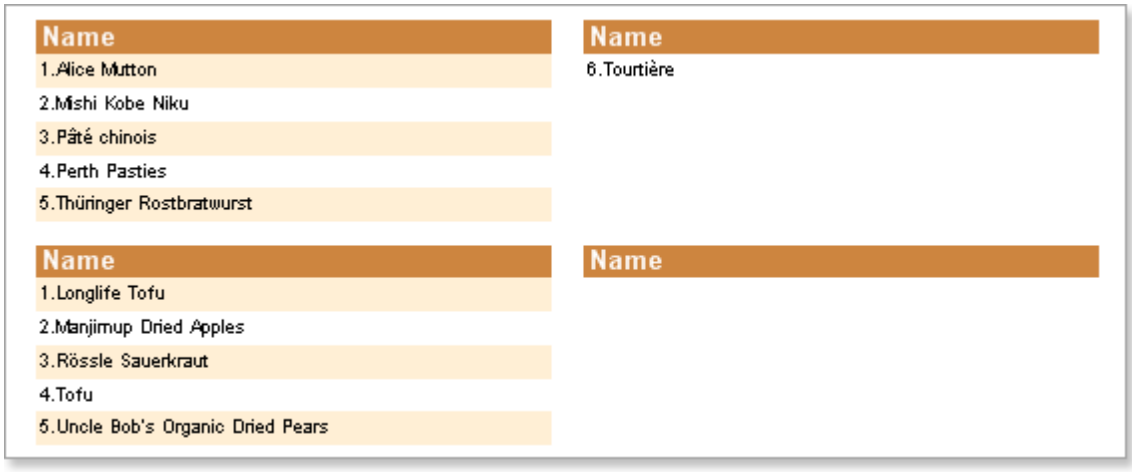
| Name |
| --- |
| 1.Alice Mutton |
| 2.Mishi Kobe Niku |
| 3.Pâté chinois |

| Name |
| --- |
| 4.Perth Pasties |
| 5.Thüringer Rostbratwurst |
| 6.Tourtière |

| Name |
| --- |
| 1.Longlife Tofu |
| 2.Manjimup Dried Apples |
| 3.Rössle Sauerkraut |

| Name |
| --- |
| 4.Tofu |
| 5.Uncle Bob's Organic Dried Pears |

For this case the **MinRowsInColumn** property of the **Data** band is used. Minimal number of rows in the first column is set in this property. By default this property in set to 0. This means that control on minimal number of data rows is not processed. If the value of this property is higher than 0 then, in the first column, no less than indicated number of rows will be output.



| Name |
| --- |
| 1.Alice Mutton |
| 2.Mishi Kobe Niku |
| 3.Pâté chinois |
| 4.Perth Pasties |
| 5.Thüringer Rostbratwurst |

| Name |
| --- |
| 6.Tourtière |

| Name |
| --- |
| 1.Longlife Tofu |
| 2.Manjimup Dried Apples |
| 3.Rössle Sauerkraut |
| 4.Tofu |
| 5.Uncle Bob's Organic Dried Pears |

| Name |
| --- |

### 2.17.2.4. ColumnHeader Band

The **Header** band is used to output data headers. But there is also a special **ColumnHeader** band. What is the difference between two bands? The **Header** band is output once in front of the **Data** band. The **ColumnHeader** band is used to output only once. But components on this band can be put again under the every column. Besides the **ColumnHeader** band is used only for the columns positioned on the **Data** band.

**Notice.** The **ColumnHeader** is used for columns placed on the **Data** band. The **Header** band for page columns has the same functionality.

For example, create two bands: the **Data** band and the **ColumnHeader** band. Set three columns in the **Columns** property of the **Data** band. Also set the column width using the **ColumnWidth** property. Then put a text component on the **Data** band with the text DATA. Put a text component on

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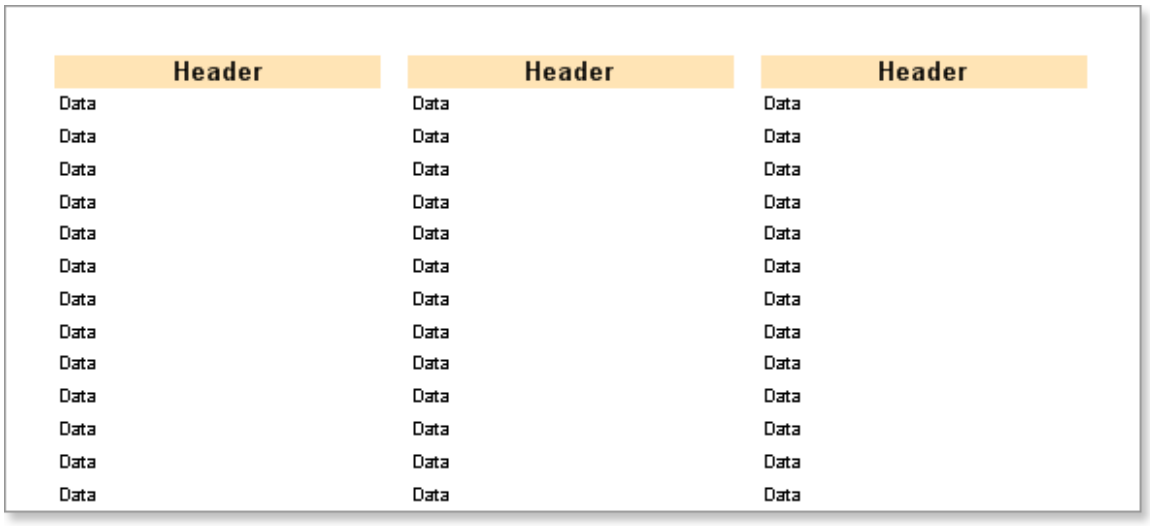
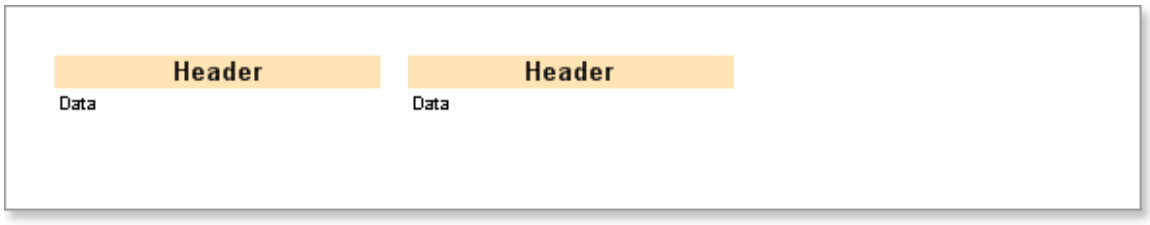
the **ColumnHeader** band with the HEADER text. Do not forget that red lines are column edges.

Run a report. The **Header** is printed over every column. So it is enough to create a column header only once and it will be printed on each column.




#### 2.17.2.4.1 PrintIfEmpty Property.

And what if data rows are less than number of columns? In this case, the same number of column headers as the number of columns will be output on a page. If there are two columns then two headers will be output.




And what to do if it is necessary to output the same number of column headers as the number of columns on a page without considering the number of strings. In this case it is possible to use the

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**PrintIfEmpty** property of the **ColumnHeader** band. If to set this property to **true**, then it is possible to always output the column headers.

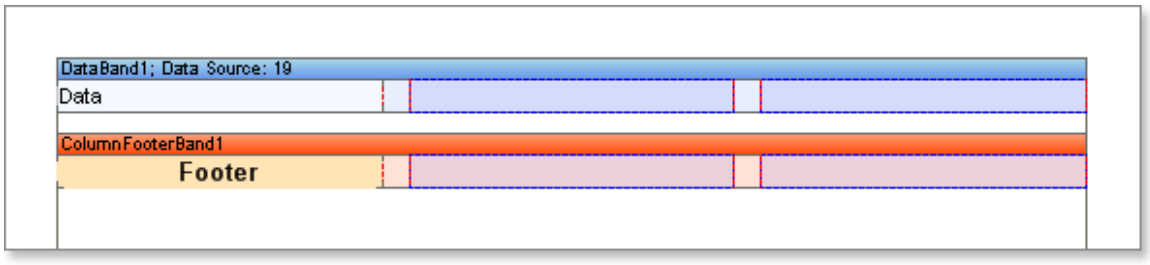
**Important!** It is important to remember that when the **MinRowsInColumn** property of the **DownThenAcross** mode is used, the report generator is not able to indicate the exact number of rows. Therefore, when using the **MinRowsInColumn** property, set the **PrintIfEmpty** property to **true** .

### 2.17.2.5. ColumnFooter Band

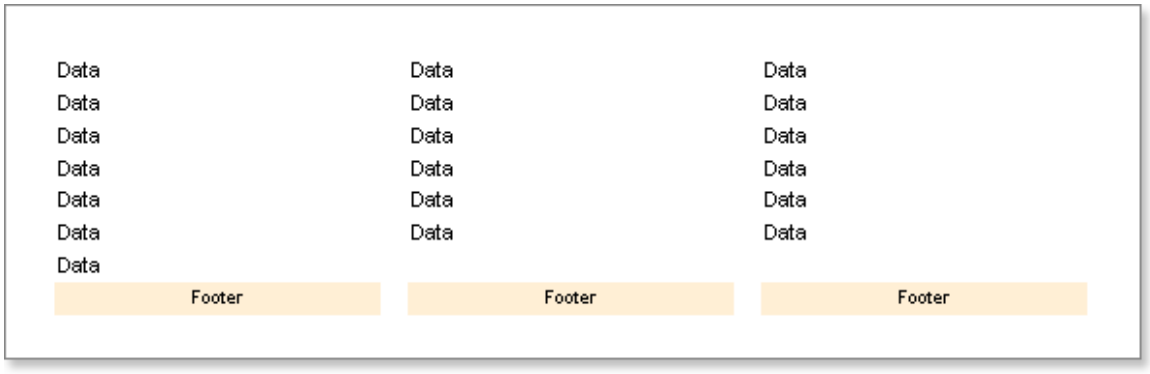
The **ColumnFooter** band is used to output footers of columns on the **Data** band. The **ColumnFooter** band is output once under each column. All components which are placed on this band will also be output under each column.

**Notice.** The **ColumnFooter** band is used only for columns which are placed on the **Data** band. The **Footer** band for columns on a page has the same functionatity.

For example, put two bands on a page: the **Data** band and the the **ColumnFooter** band. Set the **Column** property of the **Data** to 3. Set the width of a column using the **ColumnWidth** property. Put a text component with the DATA text in it in the **Data** band. Put a text component with the FOOTER text in it in the **ColumnFooter** band. Red lines on a page indicate column edges.




Run a report. The **Footer** text will be output under every column.

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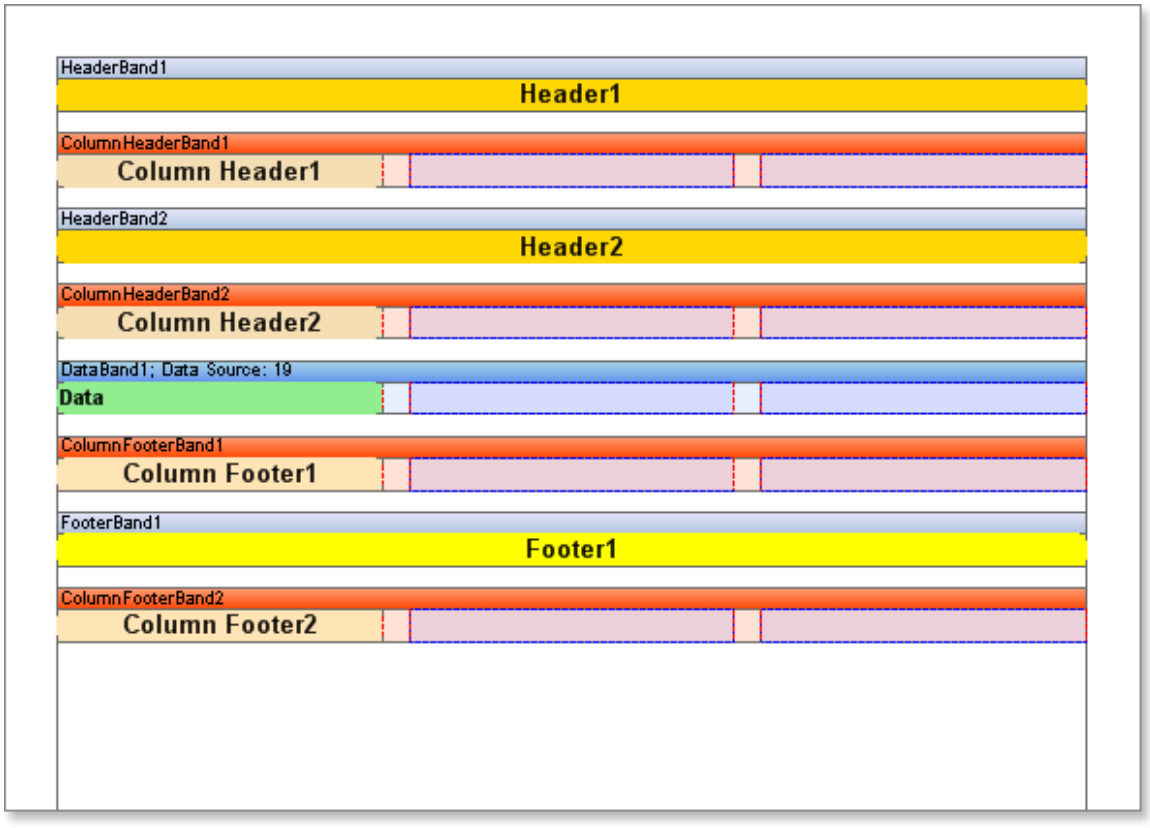
#### 2.17.2.5.1 PrintIfEmpty Property.

If the number of data rows is less than the number of columns, then the band output will occur as well as column headers output. So there will be output as many footers as columns. If it is necessary to output the same number of column footers as the number of columns on a page without considering the number of rows, then you have to use the **PrintIfEmpty** property of the **ColumnFooter** band. If to set this property to **true**, then the column footer is always output.

**Important!** It is important to remember that if to use the **DownThenAcross** mode then, when using the **MinRowsInColumn** property, the report generator is able to indicate the exact number of columns. Therefore, using the **MinRowsInColumn** property, set the **PrintIfEmpty** property to **true**.

### 2.17.2.6. Combination of Headers and Footers

When headers and footers for columns are output on a page, then it is very important to consider what is the order of bands output on a page. Create a report using multiple **Header** bands, **Footer** bands, **ColumnHeader** bands, **ColumnFooter** bands and one **Data** band. Put all Headers and Footers at random order. There are several types of mode to output columns. They will be reviewed in the next topics.

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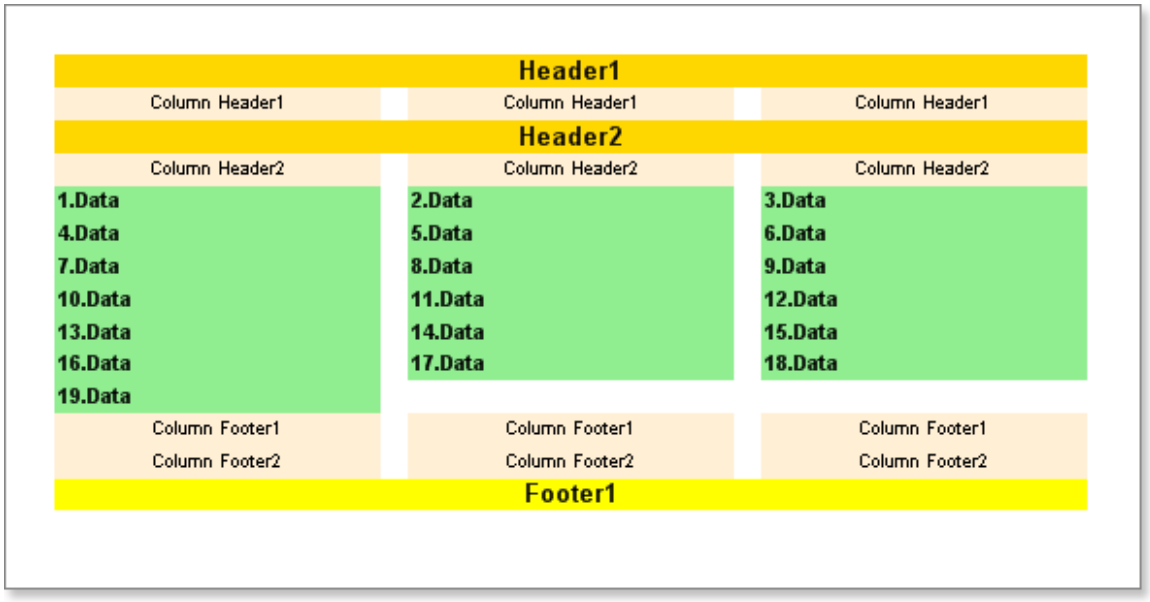
#### 2.17.2.6.1 AcrossThenDown Column Mode.

In the **AcrossThenDown** mode all header bands are output in order of their position in the report template. In our case (see the picture below) the **Header1** band will be output first. Then the **ColumnHeader1** band will be output three times over the every column. And then – the **Header2** band and over the every column - the **ColumnHeader2** band. Bands are output in order of their position on a page. It allows combining both types of header bands for getting the result you want. **Footer** bands are output on the different kind of way. The **ColumnFooters** are output first. Then the **Footer** bands are output in case if all data rows were output. But if the **PrintOnAllPages** properties of the **Footer** bands is set to **true**, then bands are output in order of their position on a page. It is important to remember that if the **PrintOnAllPages** property of the **Footer** band is not set to **true**, then this band will be output only after all rows are output. It is necessary to remember when report rendering.




#### 2.17.2.6.2 DownThenAcross Column Mode.

This mode is similar to the **Across Then Down**. All bands are output in the same order as they are placed on a page. If the **PrintOnAllPages** property of the **Footer** band is set to **true**, then all **Footer** bands are output in the same order as they are placed on page. If the **PrintOnAllPages** property of the **Footer** band is set to **false**, then only **ColumnFooter** bands are output. The **Footer** bands are ignored in this case.

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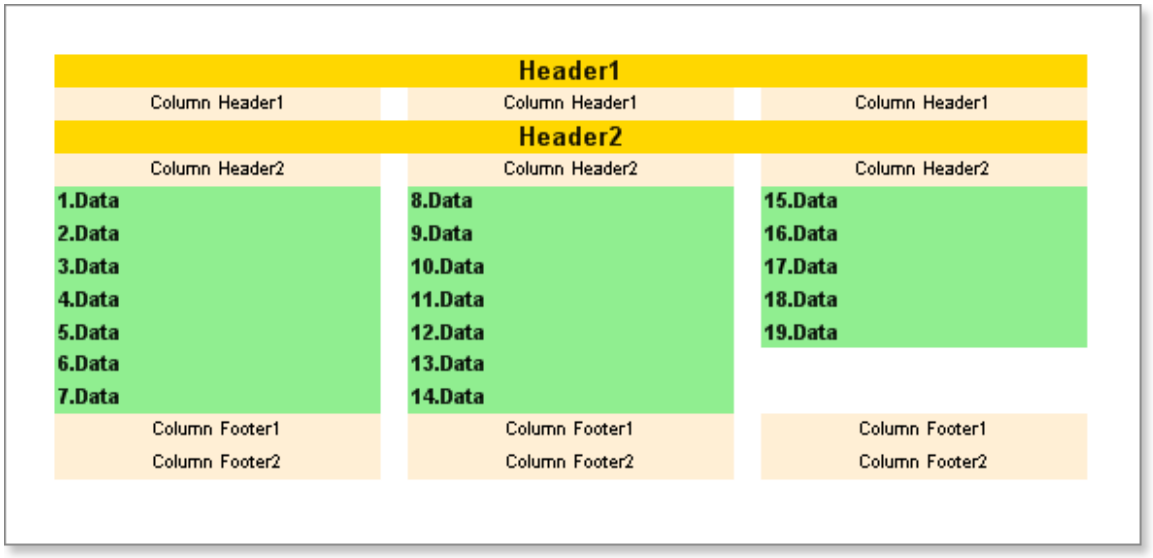


## 2.18. Pagination

Sometimes it is necessary to number pages. Page numbering is applied using system variables. Page numbering is set by adding system variables into an expression. The code below shows how

```
{PageNumber}
```

```
{PageNofM}
```

```
{TotalPageCount}
```

### 2.18.1. Page Number

Let see page numbering using the **PageNumber** system variable. When using this variable, the page number will be displayed on each page. Place where the page number is shown depends on which band is the text component, in expressions of what the system variable is used.

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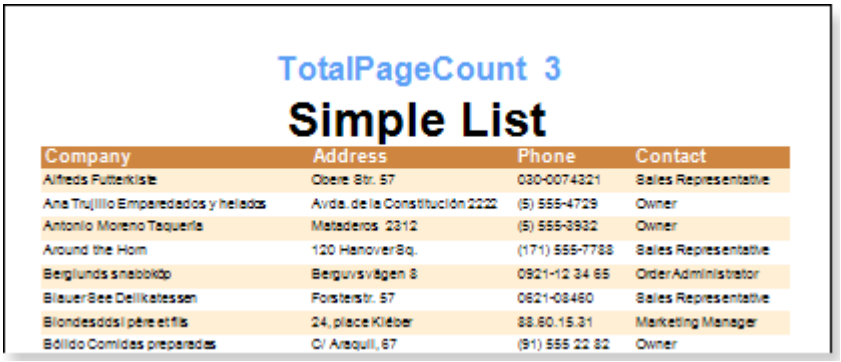
On the picture above the **PageNumber** system variable was used on the **PageHeaderBand** band. System variable can be used in any text component. The text component can be placed on any page band.

## 2.18.2. Total Page Count

The **TotalPageCount** system variable is used to output the total number of pages.




On the picture above you can see how total number of pages is output. The **TotalPageCount** system variable is used with the **PageNumber** system variable. Usually it looks like this: **{PageNumber} Of {TotalPageCount}**. For example, **5 of 10**.

## 2.18.3. Page NofM

In order to show the page number of the total number of pages in the report generator the **PageNofM** system variable is used. This variable is a combination of system variables, such as the **PageNumber** and the **TotalPageCount**, i.e. it will print the page number on the total number of pages.

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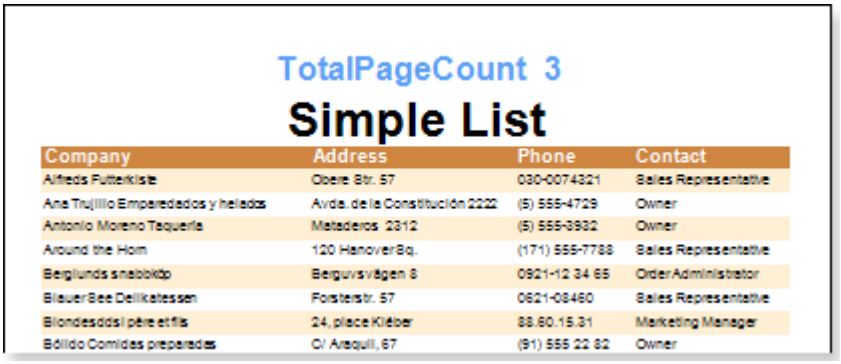
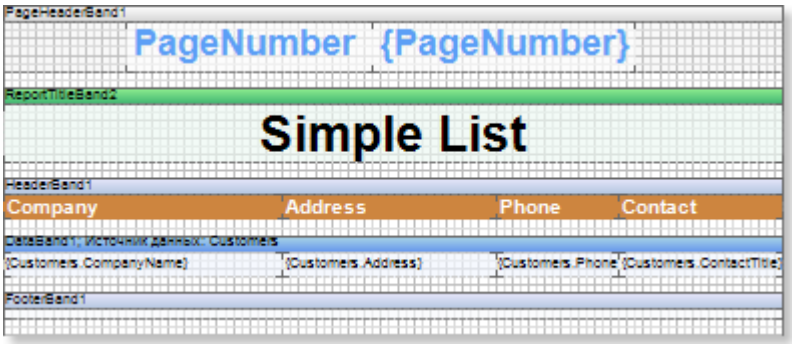


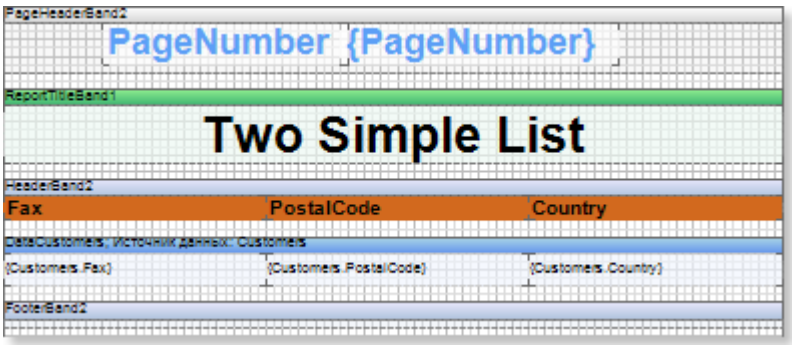

On the picture above the **"Page 1 of 3"** shows that the first page of three pages is available. The **PageNofM** depends on localization so it should be used very carefully.

## 2.18.4. ResetPageNumber Property

The numbering of the pages of the report begins with the number 1 and is defined consistently for each page built by the report.




On the picture above the first page of a template is represented.




On the picture above the second page of a template is represented.

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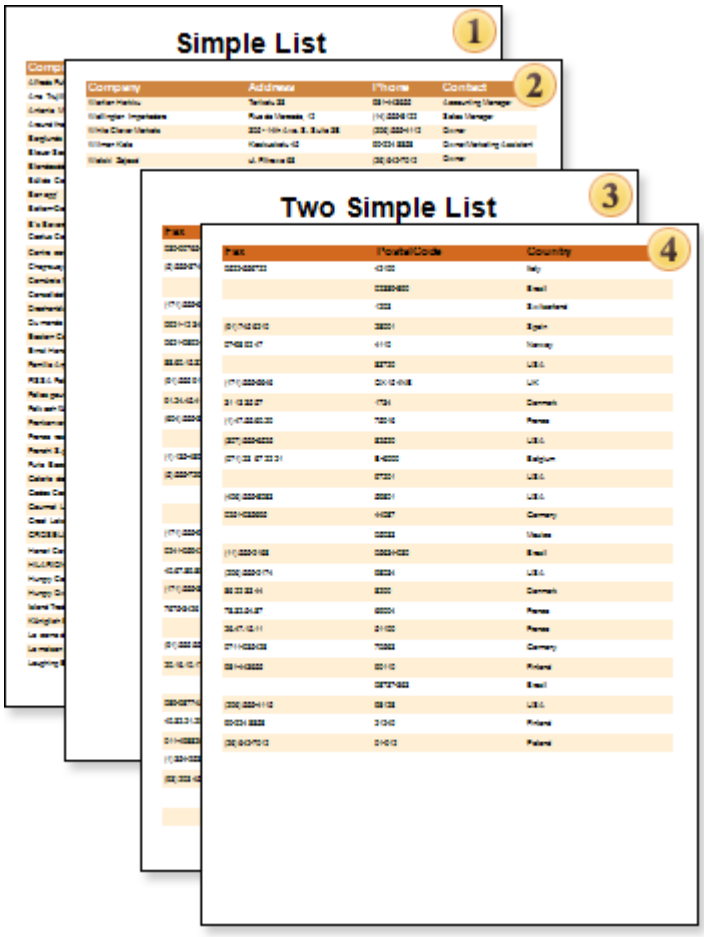
If, when report rendering, the **ResetPageNumber** is set to **false**, then numeration will look like on the picture below:




If the set the **ResetPageNumber** page property to **true**, then numeration for each page of a template will start from 1:

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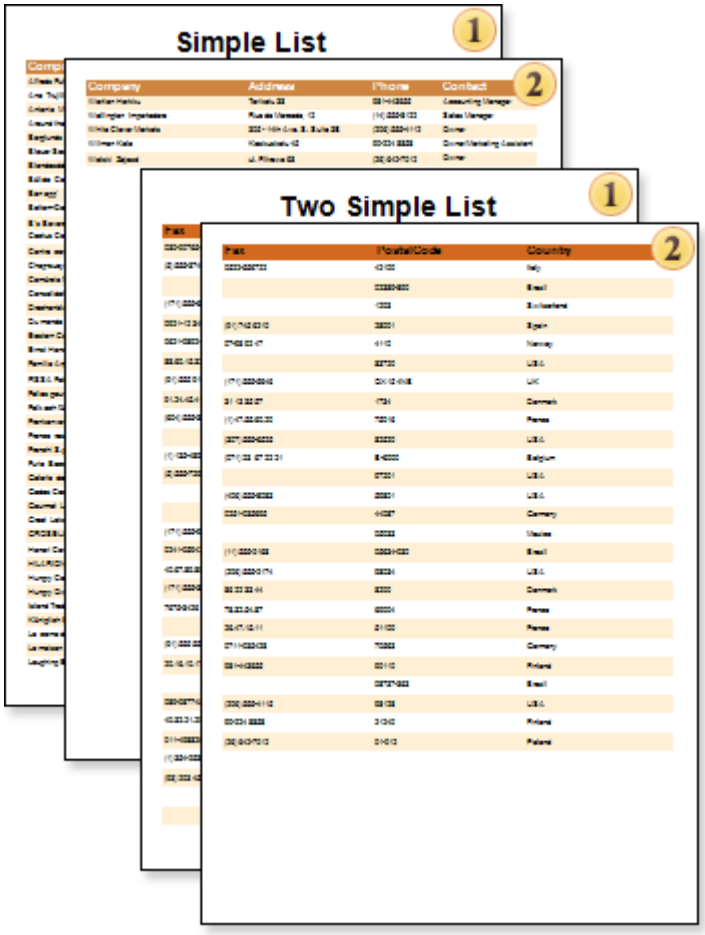


**Information:** The **ResetPageNumber** property works with the following variables: **PageNumber**, **PageNofM**, **TotalPageCount**. With system variables: **PageNumberThrough**, **PageNofMThrough**, **TotalPageCountThrough** - this property **does not work**.

By default the property is set to **false**.

## 2.18.5. Sequentially Numbered Pages

Sequential numbering (numbering without taking into account the **ResetPageNumber** property) set the **SystemVariables**:

1. {PageNumberThrough} - **PageNumberThrough**, displays the page number;
2. {TotalPageCountThrough} - **TotalPageCountThrough**, displays the total number of pages of the rendered report;
3. {PageNofMThrough} - **PageNofM**, is a combination of **PageNumberThrough** and **TotalPageCountThrough**, and displays the page number in relation to the total number of pages

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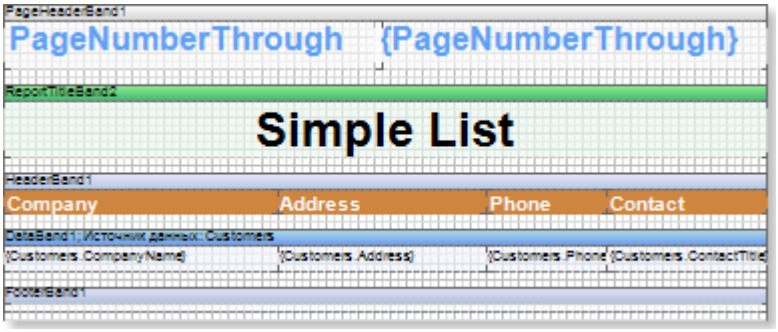
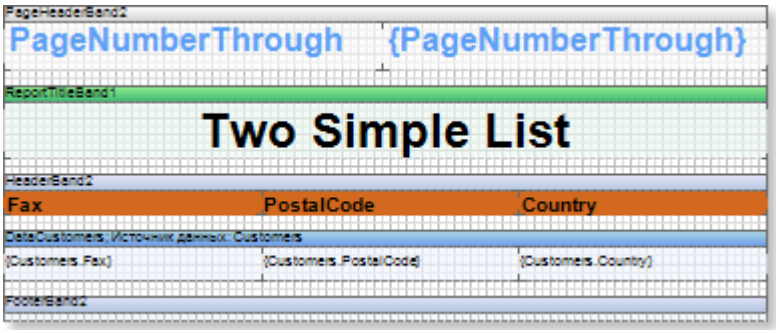
in the rendered report..




The picture above shows the first page of the report template.




The picture above shows the second page of the report template.

After rendering a report, even if the **ResetPageNumber** property of the page is set to **true**, the numbering of pages of the rendered report is to be consistent.

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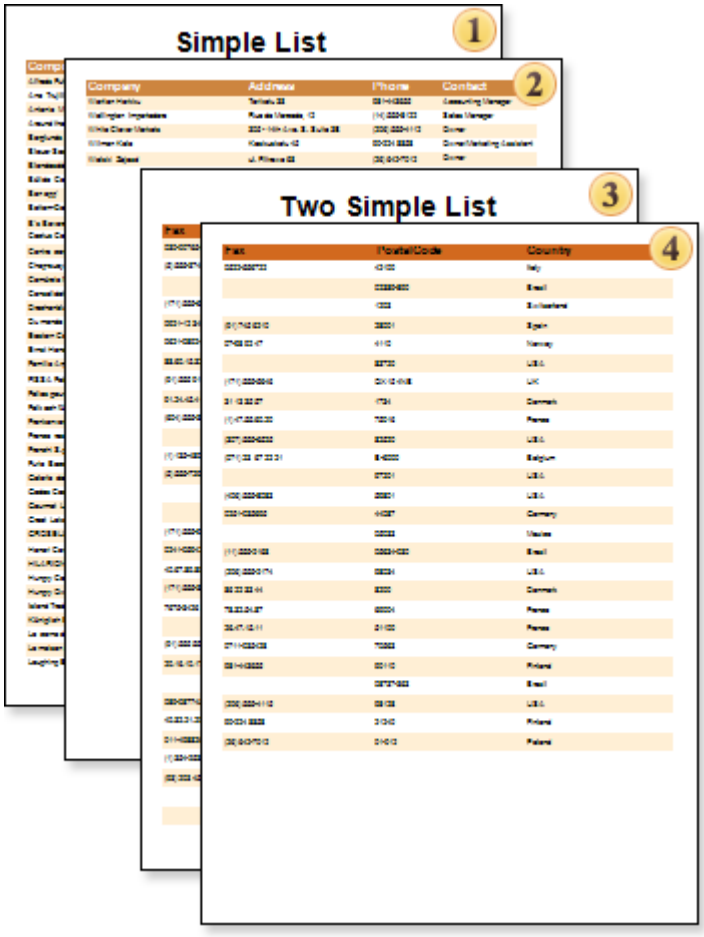


In other words, if the **ResetPageNumber** property is set to **true**, then, when using the system variables, mentioned above, the numeration will not be reset. So it will continue to be consistent for each page of the rendered report.

## 2.19. Breaking Component

If, when rendering a report, the component will not fit the entire page, it will be carried to the next page. In addition, there are cases where the component has a size larger than the page size and cannot be output entirely on a page. In this case, you can use the **CanBreak** property. Components for which this property is set to **true**, can be "broken" with the Report Engine. I.e. the first part of a component will be printed on one page, and the second one on the next page. For example, a component of the **Text** has 10 lines, on the first page 7 lines will be output, and 3 lines on the next page.

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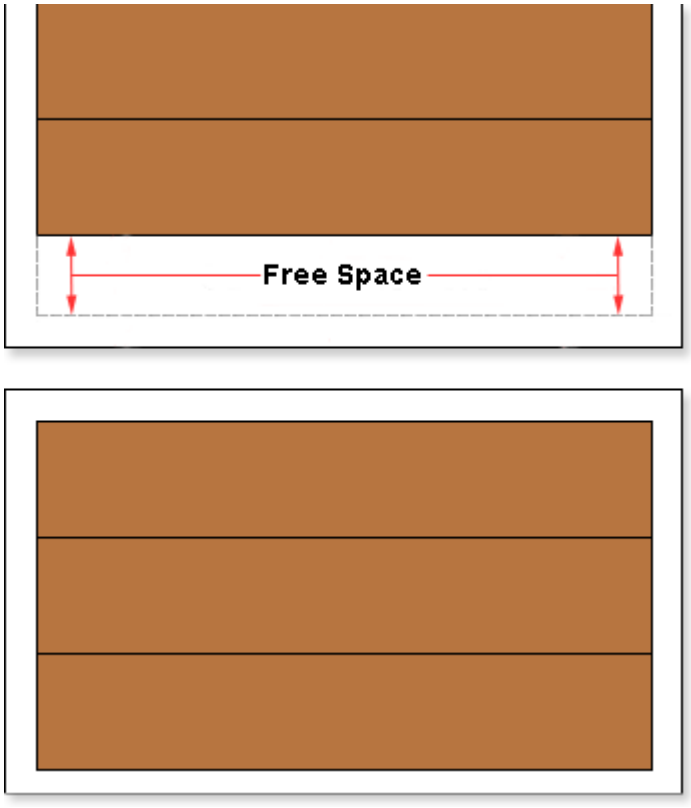
## 2.19.1. Breaking Bands

How to use the **CanBreak** property of bands. The picture below shows two pages of a rendered report, which has 5 bands. The picture shows: the first and the second bands are output on the first page. The third band could not fit the bottom of the first page, so it was moved to the next page, along with the fourth and fifth bands.




In this case, free space available remained on the first page of the report, because the band could not fit entirely and was moved to with the report engine to the next page. If to set the **CanBreak** property to **true**, then this will be "broken. The picture below shows how the of the third band is broken.

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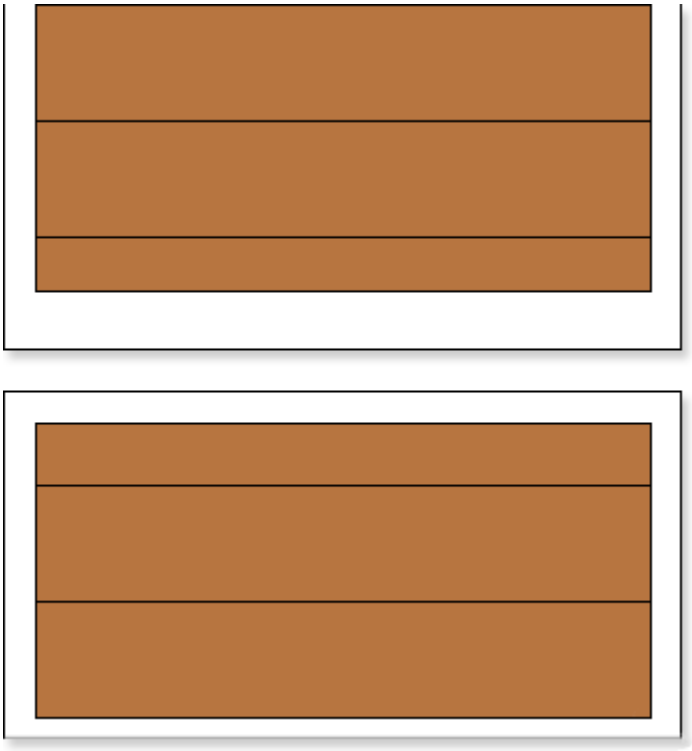

In this case we see that the third band could not fit, so it was broken: one part was left on the first page, and the second was moved to the next page, respectively. So all the space of the page was used. It should also take into account that the band may not fit within a single page. If the **CanBreak** is set to **false**, then it will be moved to the next page. If, on the next page, the band does not fit completely, it will be forcibly broken. You should know that special bands are displayed on the first page, and the remaining space of the page will be used to output the broken band. It is worth noting that the band may be output on more than one page. There are no limitations on the number of pages in which parts of the broken band can be output. By default, the **CanBreak** property is set to **false**.

## 2.19.2. Breaking Text

By default, the **CanBreak** property of the **Text** component is set to **false**. Such a Text component will not be broken if it is not enough space to print on one page, and would be moved to the next page.

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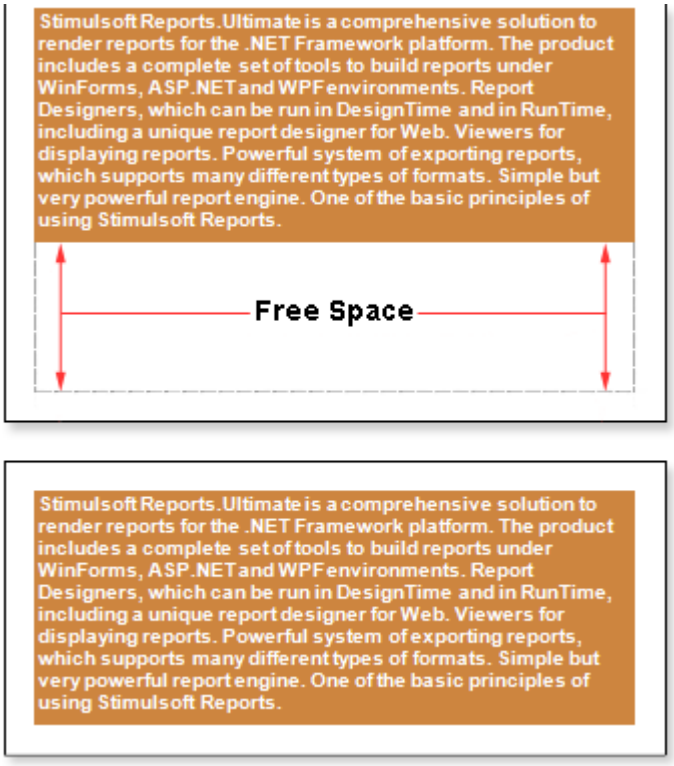


As seen on the picture above, free space left at the bottom of the first page. To avoid this, set the **CanBreak** property to **true**. And then, a **Text** component is broken, for example, as shown on a picture below:

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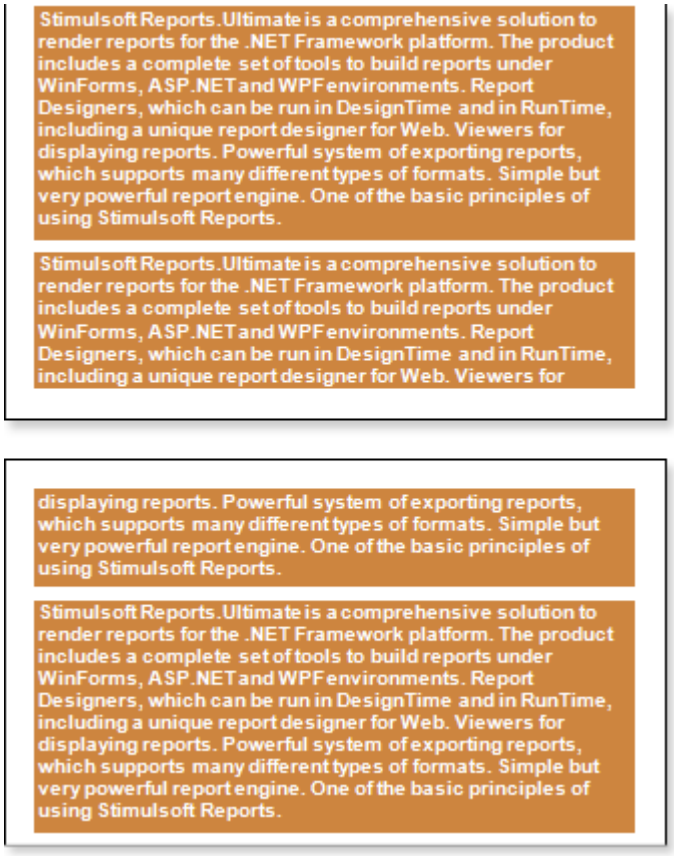


In this case, a **Text** component could not fit entirely on the bottom of a page, so it was broken. I.e. a part of the component remains on the same page, and another part was moved to the next one. Note that the text component is broken by row. Small amount of free space remains, as report generator must output the full height of a row and the text remains readable. Also note that the break of the text component will not work if the **CanBreak** property in a container, which has a text component, is set to **false**. Because the container would be moved to the next page completely. Accordingly, together with it, a text component will be transferred and the break will not work. So, if you need a break, then set the **CanBreak** property to **true** for the Text component and container to what the text component is placed.

## 2.19.3. Breaking Panels

Sometimes, in a report template, where the **Panel** is used, all data cannot fit one page. If the **CanBreak** property is set to **false**, then a report, may look like on the picture below.

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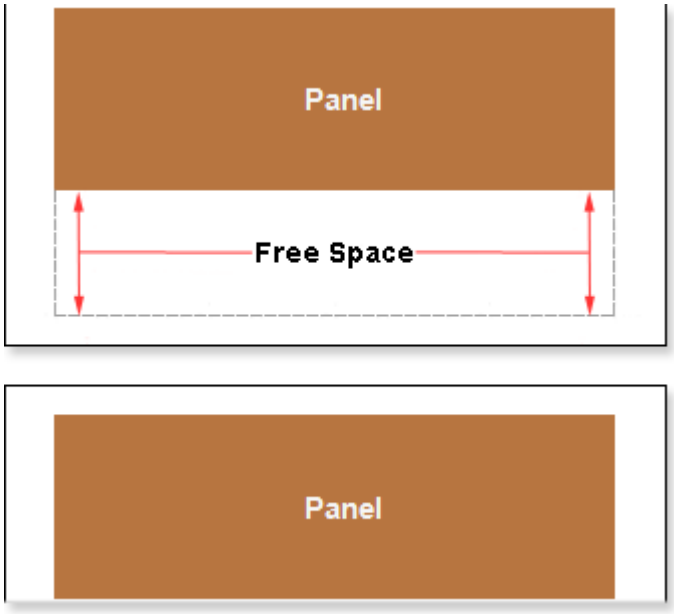
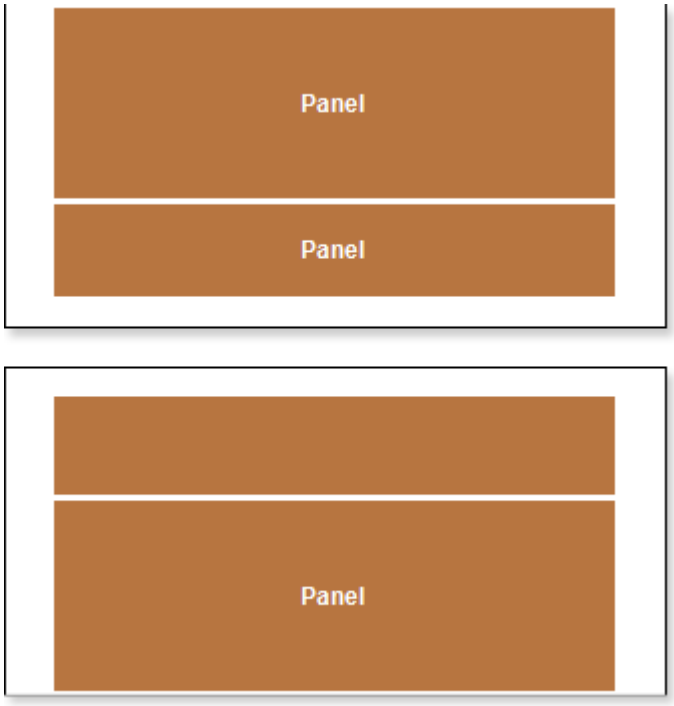



As shown in the picture above, the **Panel** was moved to another page, and free blank space remained on the previous page. If the **CanBreak** property is set to **true**, then the report may look like on the picture below:




As shown in the picture above, the **Panel** was broken, i.e. a part of it remained on the first page, and the other was moved to the next page. It should also take into account that the panel may not fit a single page. If to set the **CanBreak** property to **false**, then it will be moved to the next page. If on the next page the panel does not fit completely, it will be forcibly broken. You should know that special bands are displayed on the first page, and the remaining space of the page will be used to

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output the broken panel. It is worth noting that the panel may be output on more than one page. There are no limitations on the number of pages in which parts of the broken panel can be output. By default, the **CanBreak** property is set to **false**.

## 2.19.4. Breaking RichText

By default, the **CanBreak** property of the **RichText** component is set to **false**. Such a text component will not be broken, if it is not enough space to print it on one page, and would be moved to the next page.

As you can see on the picture above, on the free space remained at the bottom of the first page. To avoid this, set the **CanBreak** property to **true**. And then, a component of the **RichText** will be broken (see the picture below):

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As shown in the picture above, the **RichText** was broken, i.e. a part of it remained on the first page, and the other was moved to the next page. It should also take into account that the component may not fit a single page. You should know that the text component is broken rowwise. Also note that the breaking of the text component will not work if the **CanBreak** property of the band, in what the text component is placed, is set to **false**, because the band will be moved entirely to the next page. So the text component will be moved together with the band. So, if you need the text component to be broken, then values of **CanBreak** properties for the text component and the band should be set to **true**.

## 2.19.5. Breaking Images

In some cases the **Image** does not fit one page. So the image will be moved to the next page.

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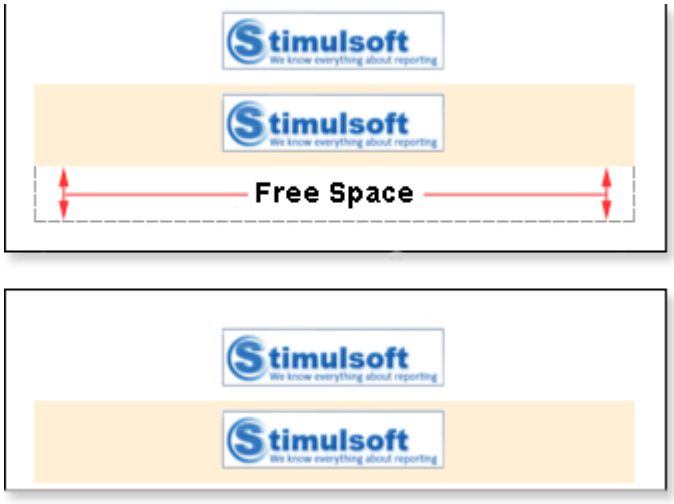


As you can see on the picture above, free space remained on the first page. To avoid this, set the **CanBreak** property to **true**. And then, the **Image** component will be broken, as seen on the picture below:

As shown in the picture above, the **Image** component was broken, i.e. a part of it remained on the first page, and the other was moved to the next page. Also note that the breaking of the **Image** component will not work if the **CanBreak** property of the band, in what the **Image** component is placed, is set to **false**, because the band will be moved entirely to the next page. So the **Image** component will be moved together with the band. So, if you need the Image to be broken, then values of **CanBreak** properties for the Image and the band should be set to **true**.

## 2.19.6. Auto-break

If a component of the report template is more than a page, then, when rendering a report, the component does not fit a page. If the **CanBreak** property is set to **true**, then the component will be broken into parts. If the **CanBreak** property is set to **false**, and the component is larger then the page of a report, the then report engine, tries to move it to the second page. If the data do not fit the second page, they will be forcibly broken, regardless of the value set for the **CanBreak** property and the availability of this property for the component of the report template. Moreover, when forced breaking, a blank page is output before the component. I.e. the first page of the report is empty, and

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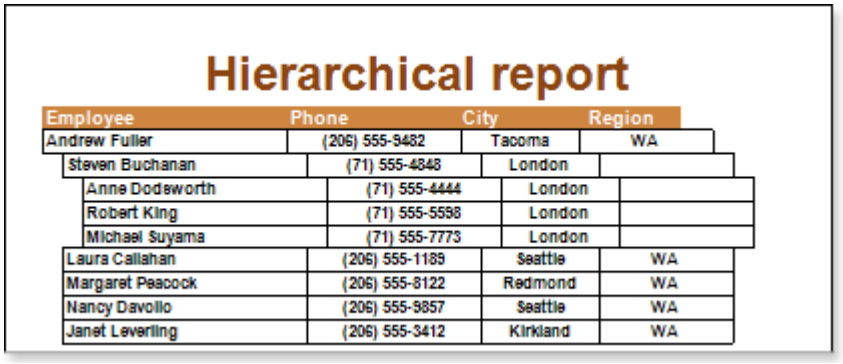
each time data output begins with a new page. In this case, also all special bands are output on the page.

### 2.19.7. Breaking and Page Bands

There is no possibility for the **PageHeaderBand** and **PageFooterBand** to change the value of the **CanBreak** property, because it is always set to the one value. By default, the **CanBreak** property is set to **true**. This means that, when designing a report, if sizes of page bands is more than a page size, then bands will broken. You should also take into account the value of the property of the component, located on the band page. If the **CanBreak** property of a component placed on the band page is set to **false**, then in that case, there will be auto-break. If the **CanBreak** property of a component placed on the band page is set to **true**, then the break will be executed, depending on the type of a component (text, panel, picture, Rich Text).

## 2.20. Hierarchical Band

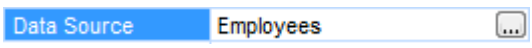
The **HierarchicalBand** is used to display report data as a tree. The picture below shows an example of a hierarchical report:




### 2.20.1. Data Output

In order to obtain a structured list in a report as a tree, you must follow these steps:

1. Specify the **DataSource** for the **HierarchicalBand** using, for example, the **DataSource** property:

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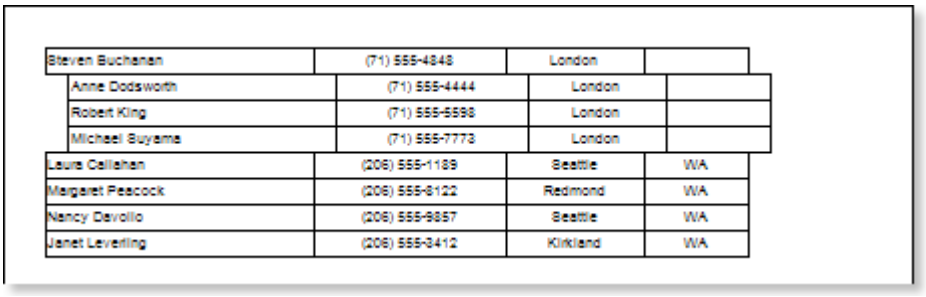
2. Set the **KeyDataColumn**, i.e. select the data column by what an identification number of data rows will be assigned. For example, a **EmployeeID** data column;
3. Set the **MasterKeyDataColumn**, i.e. select the data column by which a reference to the primary table key of the parent entry will be specified. For example, a **ReportsTo** data column;
4. Set the **Indent**, i.e. specify the indent distance of the child entry relative to the parent entry. For example, the **Indent** value will be equal to **20** units of a report (centimeters, inches, one hundredth inches, pixels);
5. Set the **ParentValue**, i.e. specify an entry that will be a parent for all rows. For example, set the **ParentValue** property to **2**.

The picture below shows an example of a rendered hierarchical report:



| | | | |
|---|---|---|---|
| Steven Buchanan | (71) 555-4848 | London | |
| Anne Dodsworth | (71) 555-4444 | London | |
| Robert King | (71) 555-5598 | London | |
| Michael Suyama | (71) 555-7773 | London | |
| Laura Callahan | (206) 555-1189 | Seattle | WA |
| Margaret Peacock | (206) 555-8122 | Redmond | WA |
| Nancy Davolio | (206) 555-9857 | Seattle | WA |
| Janet Leverling | (206) 555-3412 | Kirkland | WA |

## 2.20.2. KeyDataColumn Property

The **HierarchicalBand** has the **KeyDataColumn** property. This property is required for filling. If the **KeyDataColumn** is not specified, the report generator will not be able to render a report. The value of this property can be any data column from the selected **HierarchicalBand** of the data source, which entries will be keys for creating a report. For example, if the **Employees** data source is specified to the **HierarchicalBand**, then the value of the **KeyDataColumn** property is the **EmployeesID** data column, because the entry of this column is the key and contains unique codes of employees.

## 2.20.3. MasterKeyDataColumn Property

In order to represent an hierarchy in the report, you must specify the value of the **MasterKeyDataColumn** property. This property is required for filling. If the value of the **MasterKeyDataColumn** is not specified, the report generator cannot determine the hierarchy in the report. The value of this property will be a data column from the selected **HierarchicalBand** of the data source, which entries are the master key for creating an hierarchy in the report. For example, if the **Employees** data source is specified for the **HierarchicalBand**, then the **MasterKeyDataColumn** property is the **ReportsTo** column data. The values of this data column are used to specify to what this element in the table is subordinated. Usually, this column indicates the keys in the data column, which is a value of the **KeyDataColumn** property. The picture below shows the scheme of an hierarchy of the **ReportsTo** data column:

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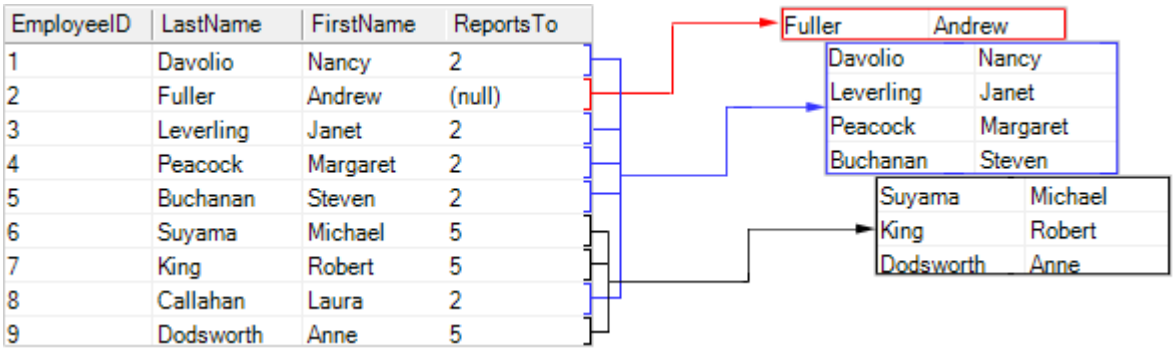

| EmployeeID | LastName | FirstName | ReportsTo |
|---|---|---|---|
| 1 | Davolio | Nancy | 2 |
| 2 | Fuller | Andrew | (null) |
| 3 | Leverling | Janet | 2 |
| 4 | Peacock | Margaret | 2 |
| 5 | Buchanan | Steven | 2 |
| 6 | Suyama | Michael | 5 |
| 7 | King | Robert | 5 |
| 8 | Callahan | Laura | 2 |
| 9 | Dodsworth | Anne | 5 |

| | |
|---|---|
| Fuller | Andrew |

| | |
|---|---|
| Davolio | Nancy |
| Leverling | Janet |
| Peacock | Margaret |
| Buchanan | Steven |

| | |
|---|---|
| Suyama | Michael |
| King | Robert |
| Dodsworth | Anne |

## 2.20.4. ParentValue Property

The **ParentValue** property is used to identify entries which will be the parent rows for the remaining rows in a report. Parent rows are rows which are placed on the top level of hierarchy and in which all other elements are included. The report must have at least one parent line, if the parent line is missing, the report cannot be rendered. The **ParentValue** property can take any value, which is an entry in the data column, which is listed as the **MasterKeyDataColumn**. For example, if the **MasterKeyDataColumn** property is the **ReportsTo** data column, then the value of the **ParentValue** property will be entries in this column. The picture below shows an example of the **EmployeeID**, **LastName**, **City**, **Region**, **ReportsTo** data columns of the **Employees** data source:

| EmployeeID | LastName | City | Region | ReportsTo |
|---|---|---|---|---|
| 1 | Davolio | Seattle | WA | 2 |
| 2 | Fuller | Tacoma | WA | (null) |
| 3 | Leverling | Kirkland | WA | 2 |
| 4 | Peacock | Redmond | WA | 2 |
| 5 | Buchanan | London | (null) | 2 |
| 6 | Suyama | London | (null) | 5 |
| 7 | King | London | (null) | 5 |
| 8 | Callahan | Seattle | WA | 2 |
| 9 | Dodsworth | London | (null) | 5 |

As can be seen in the **ReportsTo** data column the following entries are: **(null)**, **2** and **5**, i.e. any of these entries may be the value of the **Parent Value** property. If the value of this property is not specified, or is specified as a "space", then the default value is used. By default, the value of the **Parent Value** property is set to null, i.e. the parent row for all rows will be a line where there is a **(null)** entry in the **ReportsTo** data column. In this case, this is a row with the **ID 2**. The picture below shows an example of a rendered report:

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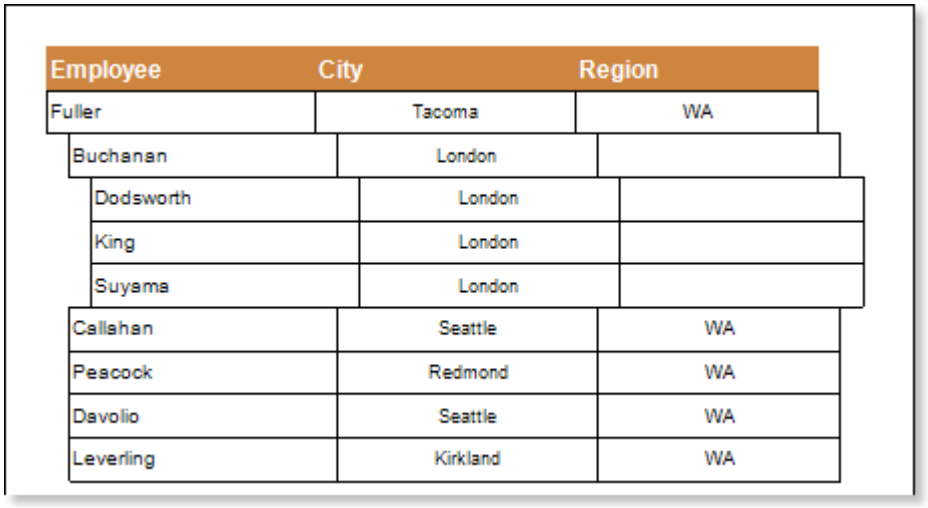

| Employee | City | Region |
|---|---|---|
| Fuller | Tacoma | WA |
| Buchanan | London | |
| Dodsworth | London | |
| King | London | |
| Suyama | London | |
| Callahan | Seattle | WA |
| Peacock | Redmond | WA |
| Davolio | Seattle | WA |
| Leverling | Kirkland | WA |

If the value of the **Parent Value** property is set to **2**, then the parent row for all rows will be a row where there is a **2** entry in the **ReportsTo** column data. In this case, these are rows with **ID 1,3,4,5,8**. The picture below shows an example of a report, where the value of the **Parent Value** property is set to the **2** value:

| Employee | City | Region |
|---|---|---|
| Buchanan | London | |
| Dodsworth | London | |
| King | London | |
| Suyama | London | |
| Callahan | Seattle | WA |
| Peacock | Redmond | WA |
| Davolio | Seattle | WA |
| Leverling | Kirkland | WA |

## 2.20.5. Indent Property

In order to visualize the hierarchy of a report you need to change a value of the **Indent** property. The value of the **Indent** property is the distance at which an entry in the hierarchy, relative to the previous level of the tree, will be moved. If the **Indent** property is set to 0, then the indent will not be performing. The picture below shows an example of a rendered hierarchical report with the indent of 0:

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| Employee | City | Region |
|---|---|---|
| Fuller | Tacoma | WA |
| Buchanan | London | |
| Dodsworth | London | |
| King | London | |
| Suyama | London | |
| Callahan | Seattle | WA |
| Peacock | Redmond | WA |
| Davolio | Seattle | WA |
| Leverling | Kirkland | WA |

If the **Indent** property is set to any value greater than 0, for example 10, the shifting will be on 10 units of a report (centimeters, inches, one hundredth of inch, pixels). The picture below shows an example of a rendered hierarchical report with the indent of 10 units in the report:

| Employee | City | Region |
|---|---|---|
| Fuller | Tacoma | WA |
| Buchanan | London | |
| Dodsworth | London | |
| King | London | |
| Suyama | London | |
| Callahan | Seattle | WA |
| Peacock | Redmond | WA |
| Davolio | Seattle | WA |
| Leverling | Kirkland | WA |

If you want a text component, which is located in the **HierarchicalBand**, do not move, you should change the value of the **Locked** property of this text component. If the **Locked** property is set to **true**, then the text component will not be shifted. If the **Locked** property is set to **false**, then the text component will be shifted. The picture below shows an example of a rendered hierarchical report:

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| Employee | City | Region |
|---|---|---|
| Fuller | Tacoma | WA |
| Buchanan | London | |
| Dodsworth | London | |
| King | London | |
| Suyama | London | |
| Callahan | Seattle | WA |
| Peacock | Redmond | WA |
| Davolio | Seattle | WA |
| Leverling | Kirkland | WA |

As can be seen on the picture above, the **Locked** property of the **Employee** text component is set to **false**, so the entries were shifted. And for the **City** and **Region** text components, this property is set to **true**, so the entries were not shifted.

**Important!** The parent entry is not shifted. Only subordinate entries are shifted: the lower the priority is, the further is shifting, relative to the parent entry.

## 2.21. Child Band

The Child Band can be used in tandem with other bands. It can be placed after any band on a page, including after the Header band or the GroupHeader band. It allows the parent band to be effectively extended whilst the child can behave differently, for example having a different background color.

**Note:** The Child band can be used in combination with any other bands placed on a page.

### Using The Child Band With Data Bands

The Child band allows you to output two bands on one data row.

To use the child band in this way you would create a new report, put a Data band on the page, and then put a Child band after the Data band.

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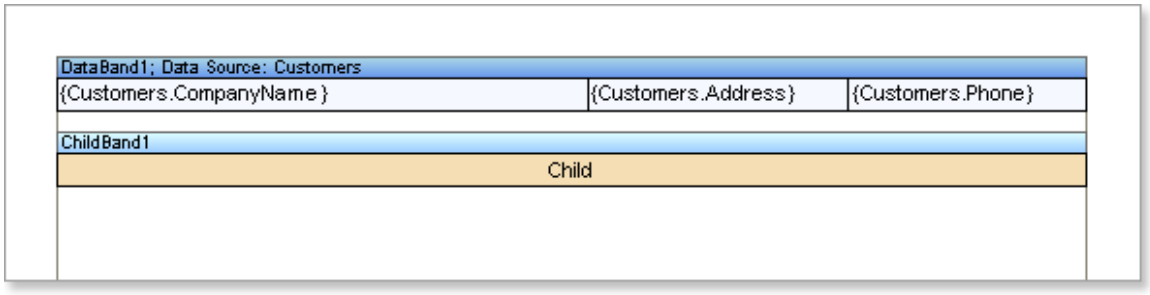


When you run the report the Child band will be printed as many times as the Data band. In other words the Child band acts as a continuation of the Data band but is still a band in its own right possessing all properties available with other bands.

| | | |
|---|---|---|
| Alfreds Futterkiste | Obere Str. 57 | 030-0074321 |
| Child | | |
| Ana Trujillo Emparedados y helados | Avda. de la Constitución 22 | (5) 555-4729 |
| Child | | |
| Antonio Moreno Taquería | Mataderos 2312 | (5) 555-3932 |
| Child | | |
| Around the Horn | 120 Hanover Sq. | (171) 555-7788 |
| Child | | |
| Berglunds snabbköp | Berguvsvägen 8 | 0921-12 34 65 |
| Child | | |
| Blauer See Delikatessen | Forsterstr. 57 | 0621-08460 |
| Child | | |
| Blondesddsl père et fils | 24, place Kléber | 88.60.15.31 |
| Child | | |
| Bólido Comidas preparadas | C/ Araquil, 67 | (91) 555 22 82 |
| Child | | |
| Bon app' | 12, rue des Bouchers | 91.24.45.40 |
| Child | | |
| Bottom-Dollar Markets | 23 Tsawassen Blvd. | (604) 555-4729 |
| Child | | |
| B's Beverages | Fauntleroy Circus | (171) 555-1212 |
| Child | | |
| Cactus Comidas para llevar | Cerrito 333 | (1) 135-5555 |
| Child | | |
| Centro comercial Moctezuma | Sierras de Granada 9993 | (5) 555-3392 |
| Child | | |
| Chop-suey Chinese | Hauptstr. 29 | 0452-076545 |
| Child | | |
| Comércio Mineiro | Av. dos Lusíadas, 23 | (11) 555-7647 |

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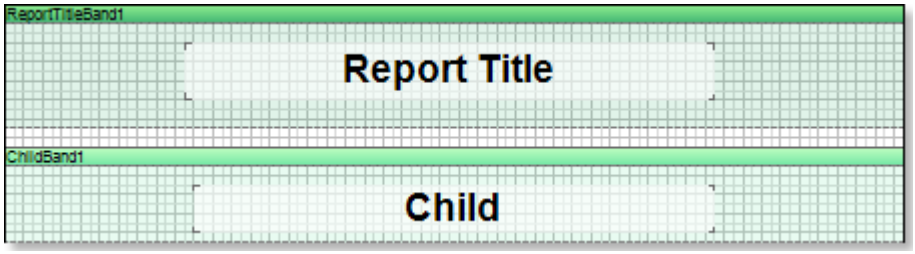
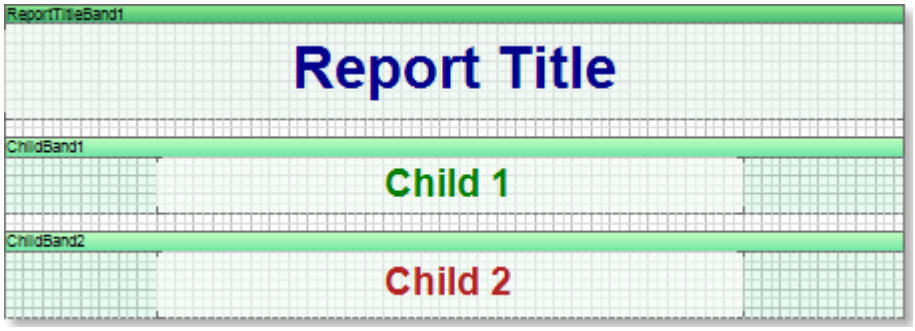
## 2.21.1. Multi Line Header

The **ChildBand** is a band that is a continuation of the band, after which it is placed.




In the picture above shows the **ChildBand** is placed after the **ReportTitleBand**, respectively, it is a continuation of this **ReportTitleBand**.

There are no limitations on the number of **ChildBands** placed on a page.




The picture above shows two **ChildBands**, which are a continuation of the **ReportTitleBand**.

Suppose there is a report with the report title that consists of a few lines. If the text is placed on the **ReportTitleBand**, then visually it may look not entirely correct:

Even when using the **GrowToHeight** property, then visually it cannot be convenient:

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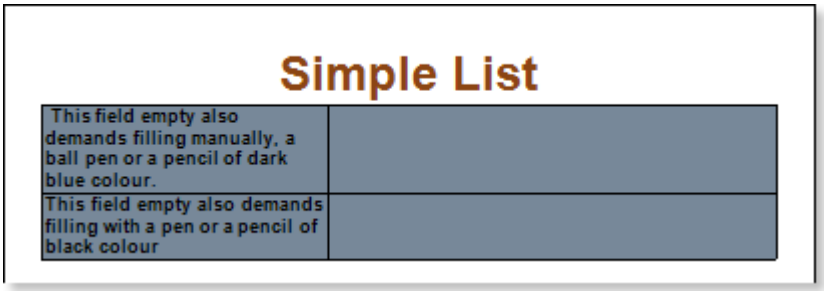
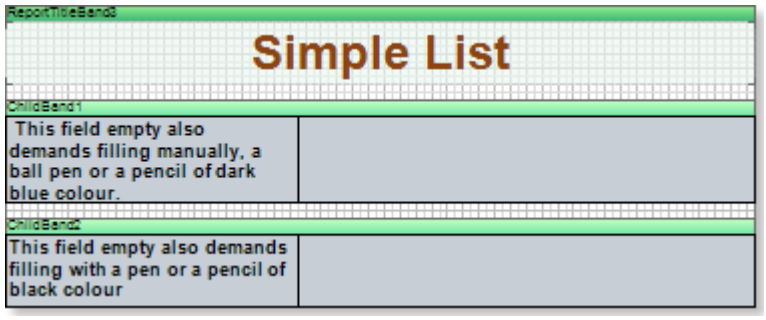
Therefore, in some cases, the title of the report is better represent with the **ChildBand**:

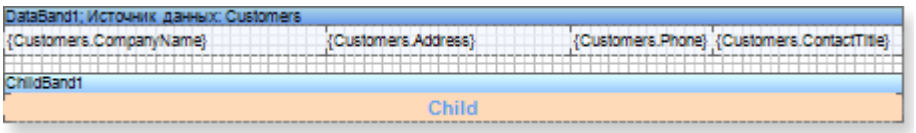



The picture below shows the report title located in the **ReportTitleBand** and two **ChildBands**.




## 2.21.2. Child Band and Data

How to output two bands on one data row? You can use the **ChildBand**. Create a new report. Put the **DataBand** on a page. Put the **ChildBand** under the **DataBand**.




Run a report for execution. As you can see, the **ChildBand** was printed as many times as the **DataBand**. I.e. the **ChildBand** is a continuation of the **DataBand**. But at the same time it remained to be a band, with all its properties.

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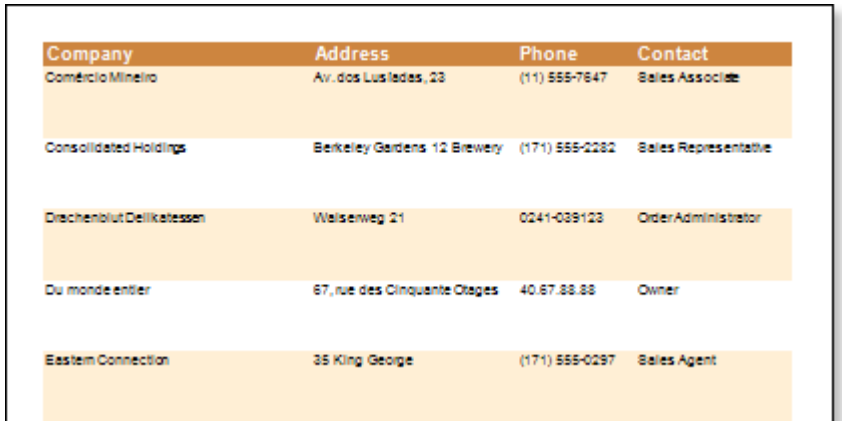
| Company | Address | Phone | Contact |
|---|---|---|---|
| FISSA Fabrica Inter. Salchichas S.A. | C/ Moralzarzal, 86 | (91) 555 94 44 | Accounting Manager |
| | Child | | |
| Folies gourmandes | 184, chaussée de Tournai | 20.16.10.16 | Assistant Sales Agent |
| | Child | | |
| Folk och fä HB | Åkergatan 24 | 0695-34 67 21 | Owner |
| | Child | | |
| Frankenversand | Berliner Platz 43 | 089-0877310 | Marketing Manager |
| | Child | | |
| France restauration | 54, rue Royale | 40.32.21.21 | Marketing Manager |
| | Child | | |
| Franchi S.p.A. | Via Monte Bianco 34 | 011-4988260 | Sales Representative |
| | Child | | |

The **ChildBand** can be used not only with the **DataBand**. It can be placed after any band on a page. For example, after the **Header** band or after the **GroupHeader** band.

The **Child** band can be used in association with any band.

## 2.21.3. KeepChildTogether Property

For example, add the **ChildBand** to the **DataBand**, as the result a data row and an empty row ( **ChildBand** row) is output, visually it looks like a high line.



| Company | Address | Phone | Contact |
|---|---|---|---|
| Comércio Mineiro | Av. dos Lusíadas, 23 | (11) 555-7647 | Sales Associate |
| Consolidated Holdings | Berkeley Gardens 12 Brewery | (171) 555-2282 | Sales Representative |
| Drachenblut Delikatessen | Walserweg 21 | 0241-039123 | Order Administrator |
| Du monde entier | 67, rue des Cinquante Otages | 40.67.88.88 | Owner |
| Eastern Connection | 35 King George | (171) 555-0297 | Sales Agent |

Add data to the **ChildBand**, for example **Country.**
The picture below shows that instead of empty space, the country name will be output.

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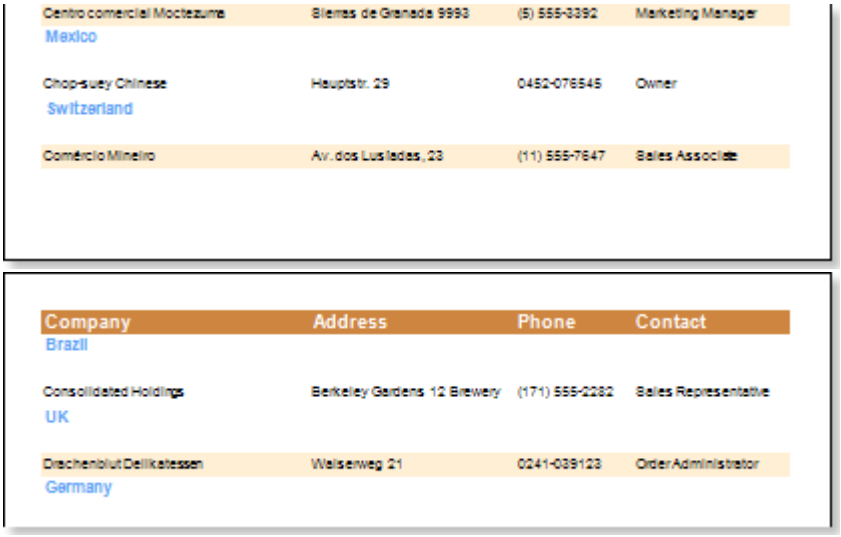

| Company | Address | Phone | Contact |
|---|---|---|---|
| Centro comercial Moctezuma | Sierras de Granada 9993 | (5) 555-3392 | Marketing Manager |
| Mexico | | | |
| Chop-suey Chinese | Hauptstr. 29 | 0452-076545 | Owner |
| Switzerland | | | |
| Comércio Mineiro | Av. dos Lusíadas, 23 | (11) 555-7647 | Sales Associate |
| Brazil | | | |
| Consolidated Holdings | Berkeley Gardens 12 Brewery | (171) 555-2282 | Sales Representative |
| UK | | | |
| Drachenblut Delikatessen | Walserweg 21 | 0241-039123 | Order Administrator |
| Germany | | | |

So as to avoid breaking data, meaning when **Company**, **Address**, **Phone**, **Contact** remained on one page, and the second part (in our case, **Country**) was moved to another page, the **ChildBand** has the **KeepChildTogether** property.

| Company | Address | Phone | Contact |
|---|---|---|---|
| Comércio Mineiro | Av. dos Lusíadas, 23 | (11) 555-7647 | Sales Associate |
| Brazil | | | |
| Consolidated Holdings | Berkeley Gardens 12 Brewery | (171) 555-2282 | Sales Representative |
| UK | | | |
| Drachenblut Delikatessen | Walserweg 21 | 0241-039123 | Order Administrator |
| Germany | | | |

By default the property is set to **true**.

## 2.22. Empty Band

The **EmptyData** band is used to fill free space on the bottom of a page with additional empty data rows formatted to match the displayed data. This example shows a page without an **EmptyData** band:

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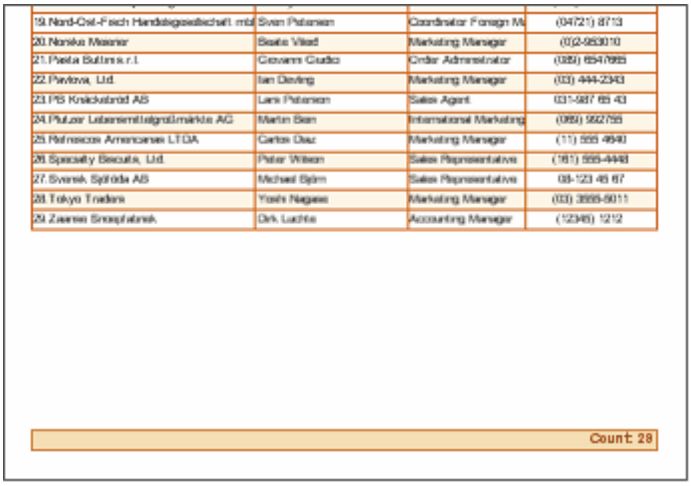


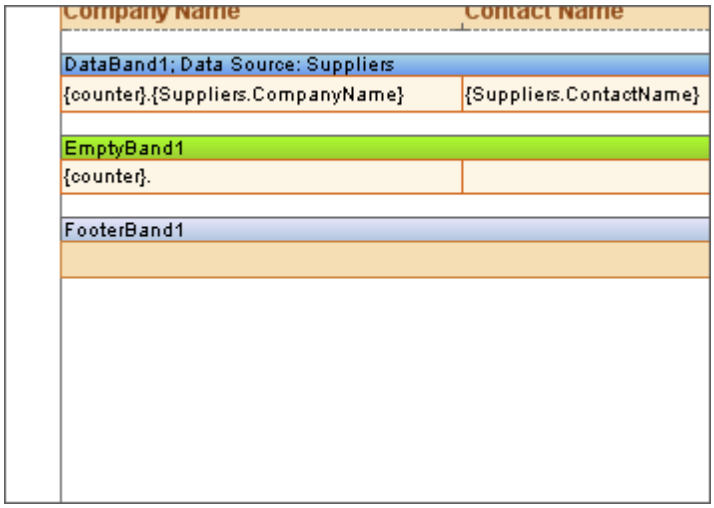

Adding an **EmptyData** band to the same page changes the look of the empty part of the page to match the formatting of the rest of the data.

**Example**

Create a new report with borders around the text items on the data band. Then drop an Empty Data band after the Data band. If there is more than one **Data** band on the page then you should place the **EmptyData** band after the last **Data** band, but before any footer bands.

**Note:** To output Footer bands on the bottom of a page set the **PrintAtBottom** property of each Footer band to true.

Then add text objects to the empty band to match those on the Data band. The result should look something like this:




If you then run the report you will see that the empty space is replaced with formatted empty data rows:

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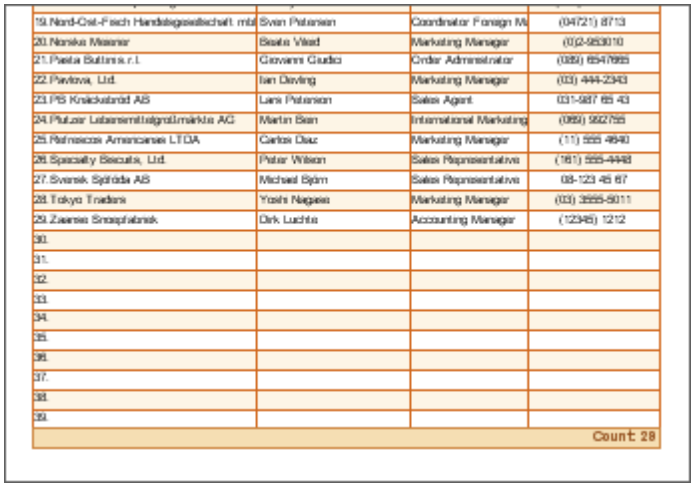
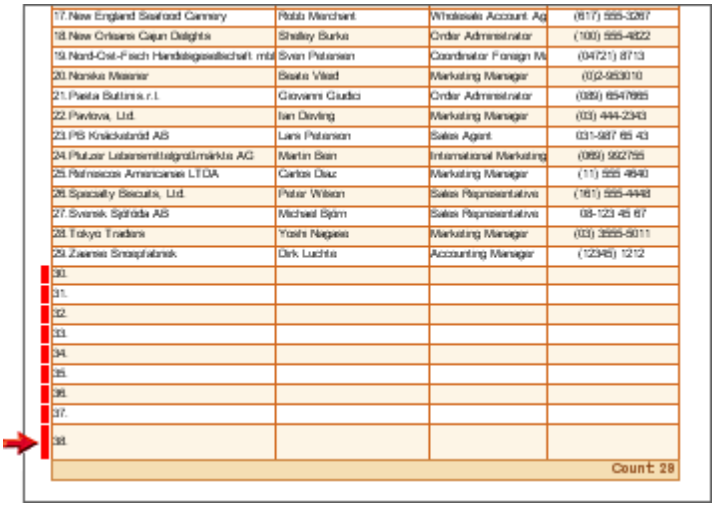


| | | | |
|---|---|---|---|
| 19. Nord-Ost-Fisch Handelsgesellschaft mbH | Sven Petersen | Coordinator Foreign M | (04721) 8713 |
| 20. Norske Meieier | Beate Vileid | Marketing Manager | (0)2-953010 |
| 21. Pasta Buttini s.r.l. | Giovanni Giudici | Order Administrator | (089) 6547665 |
| 22. Pavlova, Ltd. | Ian Devling | Marketing Manager | (03) 444-2343 |
| 23. PB Knäckebröd AB | Lars Peterson | Sales Agent | 031-987 65 43 |
| 24. Plutzer Lebensmittelgroßmärkte AG | Martin Bein | International Marketing | (069) 992755 |
| 25. Refrescos Americanas LTDA | Carlos Diaz | Marketing Manager | (11) 555 4640 |
| 26. Specialty Biscuits, Ltd. | Peter Wilson | Sales Representative | (161) 555-4448 |
| 27. Svensk Sjöföda AB | Michael Björn | Sales Representative | 08-123 45 67 |
| 28. Tokyo Traders | Yoshi Nagase | Marketing Manager | (03) 3555-5011 |
| 29. Zaanse Snoepfabriek | Dirk Luchte | Accounting Manager | (12345) 1212 |
| 30. | | | |
| 31. | | | |
| 32. | | | |
| 33. | | | |
| 34. | | | |
| 35. | | | |
| 36. | | | |
| 37. | | | |
| 38. | | | |
| 39. | | | |
| | | | Count: 28 |

## 2.22.1. Empty Band Modes

The **Empty** band has only one special property - **SizeMode**. This property indicates the behavior of the Empty Band on the bottom of a page. There are 4 values of the property: **IncreaseLastRow**, **DecreaseLastRow**, **AlignFooterToBottom**, **AlignFooterToTop**. The **IncreaseLastRow** indicates that if, when filling the page by an Empty band, there is a free space to partially output an Empty Band, then it is possible to increase the last row. The picture below shows this.



| | | | |
|---|---|---|---|
| 17. New England Seafood Cannery | Robb Merchant | Wholesale Account Ag | (617) 555-3267 |
| 18. New Orleans Cajun Delights | Shelley Burke | Order Administrator | (100) 555-4822 |
| 19. Nord-Ost-Fisch Handelsgesellschaft mbH | Sven Petersen | Coordinator Foreign M | (04721) 8713 |
| 20. Norske Meieier | Beate Vileid | Marketing Manager | (0)2-953010 |
| 21. Pasta Buttini s.r.l. | Giovanni Giudici | Order Administrator | (089) 6547665 |
| 22. Pavlova, Ltd. | Ian Devling | Marketing Manager | (03) 444-2343 |
| 23. PB Knäckebröd AB | Lars Peterson | Sales Agent | 031-987 65 43 |
| 24. Plutzer Lebensmittelgroßmärkte AG | Martin Bein | International Marketing | (069) 992755 |
| 25. Refrescos Americanas LTDA | Carlos Diaz | Marketing Manager | (11) 555 4640 |
| 26. Specialty Biscuits, Ltd. | Peter Wilson | Sales Representative | (161) 555-4448 |
| 27. Svensk Sjöföda AB | Michael Björn | Sales Representative | 08-123 45 67 |
| 28. Tokyo Traders | Yoshi Nagase | Marketing Manager | (03) 3555-5011 |
| 29. Zaanse Snoepfabriek | Dirk Luchte | Accounting Manager | (12345) 1212 |
| 30. | | | |
| 31. | | | |
| 32. | | | |
| 33. | | | |
| 34. | | | |
| 35. | | | |
| 36. | | | |
| 37. | | | |
| 38. | | | |
| | | | Count: 28 |

**DecreaseLastRow**. The last row of the **Empty Band** will be decreased by height. The picture below shows this.

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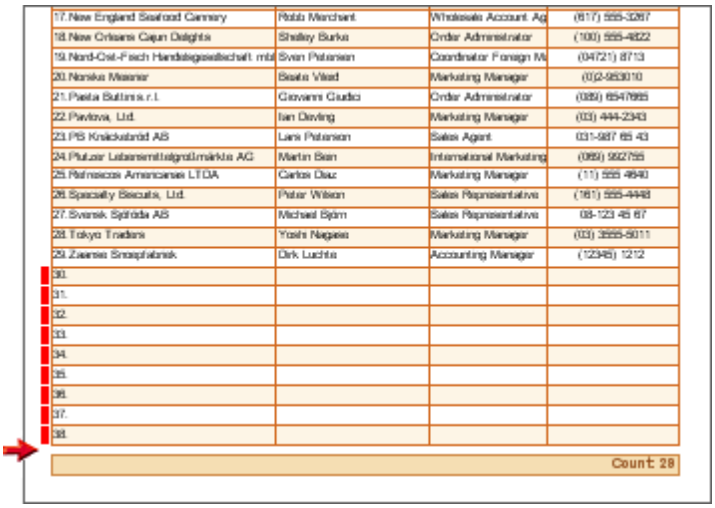
**AlignFooterToBottom**. If there is no free space for the **Empty Band** then this band is not output. The picture below shows this.




**AlignFooterToTop**. (this is the default value of the **SizeMode** property). The Footer Bands will be output on the bottom (the **PrintAtBottom** = true) and moved to top to fill the free space of the Empty Band. The picture below shows this.

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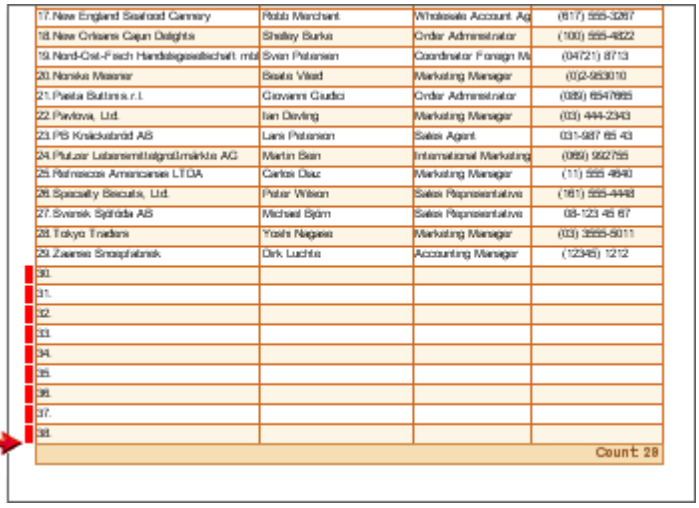
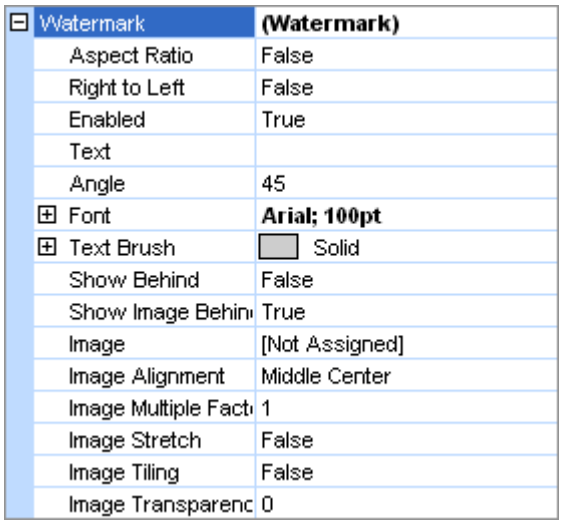



## 2.23. Watermarks

Sometimes it is required to output watermark on a page. Watermark is an inscription or an image that is placed under or over elements of a page. Stimulsoft Reports has three modes to output watermarks: the **Watermark** of a page, the **Overlay** band and direct placing on a page.

### 2.23.1. Watermark Property

The **Watermark** property allows user to output one image and one inscription on the background or foreground. The **Watermark** property has sub-properties to output watermarks.

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On the table below Text properties for watermark are described.

| | |
|---|---|
| **Text** | A text that is used to output a watermark |
| **Text Brush** | A brush to output a watermark |
| **Font** | A font that is used to output a watermark |
| **Angle** | An angle to rotate a watermark |
| **ShowBehind** | Show text of a watermark on the background or foreground |

An example how properties can be used is shown on the picture below.

On the table below Image properties for watermark are described.

| | |
|---|---|
| **Image** | An image to output |
| **ImageAlignment** | This property is used to align an image on a page |
| **ImageMultipleFactor** | A multiplier that is used to change image size |
| **AspectRatio** | Saves proportions of an image |
| **ImageTiling** | If to set this property to **true**, then it will be tiled throughout a page |
| **ImageTransparency** | This property is used to set image transparency |
| **ImageStretch** | Stretches an image on a page |
| **ShowImageBehind** | Shows an image of a watermark on the background or foreground |

Also there is another **Enabled** property. This property enables or disables watermark output.

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## 2.23.2. Overlay Band

The **OverlayBand** is used to output text, images, primitives and other data.

The **OverlayBand** is placed on the top of all other bands. The **Watermark**, for example, is placed in the foreground or in the background. The advantage of the **OverlayBand** over **Watermark** is that it is not a page element but a band which has properties of bands.
**Watermark** is either printed on all pages or not printed. The **OverlayBand** band allows selecting 7 ways of printing. In **Watermark,** for the same operation script should be printed.

The **PrintOn** property has 7 values:

- **All page;**
- **ExceptFirstPage;**
- **ExceptLastPage;**
- **ExceptFirstAndLastPage;**
- **OnlyFirstPage;**
- **OnlyLastPage;**
- **OnlyFirstAndLastPage.**

### 2.23.2.1. Vertical Alignment Property

The **VerticalAlignment** property is used to define the place of the "watermark" inscription which is output using the **OverlayBand** band. This property may have three values:

1. **Top**. The **OverlayBand** will be output on the top of a rendered report before the page header and the page header.

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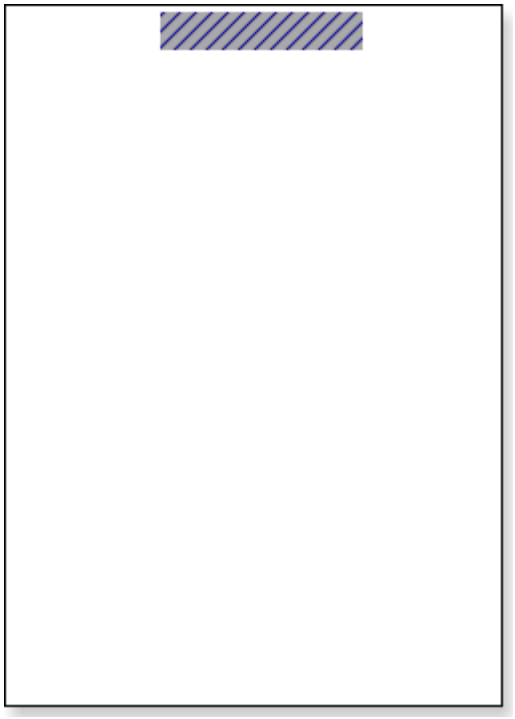
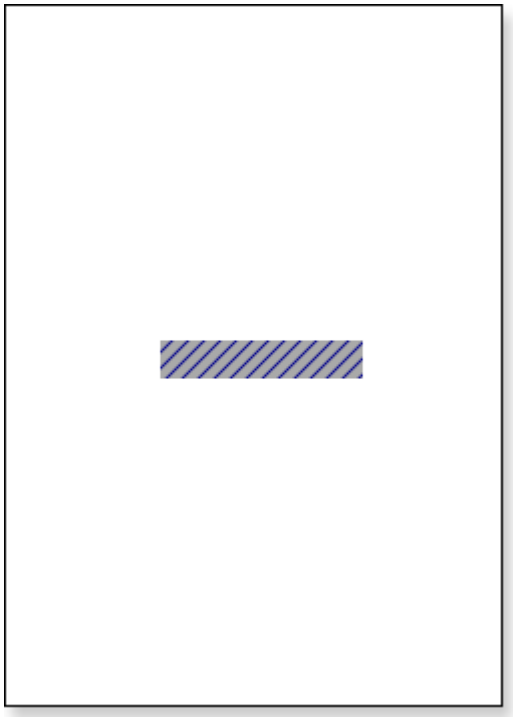


2. **Center**. The **OverlayBand** will be output on the center of a rendered report and in front of data placed on the page.



3. **Bottom**. The **OverlayBand** will be output on the bottom of a page of a report and after the page footer.

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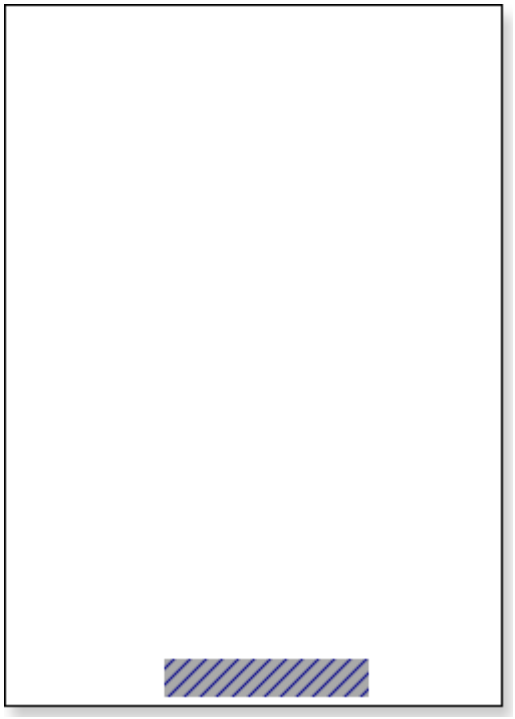
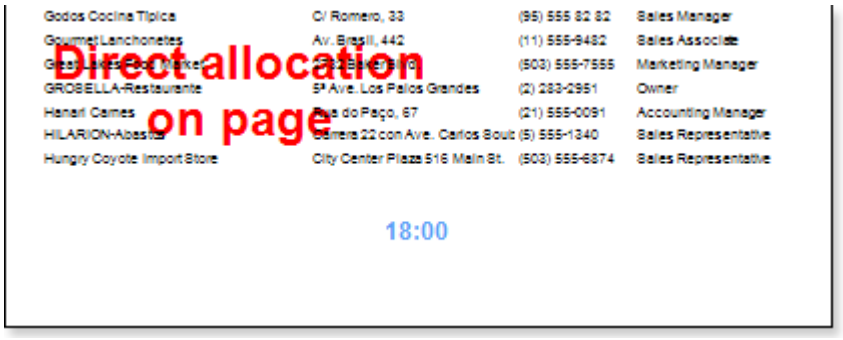


## 2.23.3. Direct Allocation on Page

One of the options for placement of the "watermark" inscription is a direct placement on the page. This means that the direct placement of any component, which will be the "watermark" inscription on a page of a report template.




The picture above shows the "watermark" by means of the direct placement a text component on a template of a page.
Direct placement on a page allows showing an inscription on the background but at any of the working space.
There is the **Linked** property. This **Linked** property may have two values: **true** and **false**.
If the property is set to **false**, then the relation with "owner" is not fixed. In other words the "owner" is

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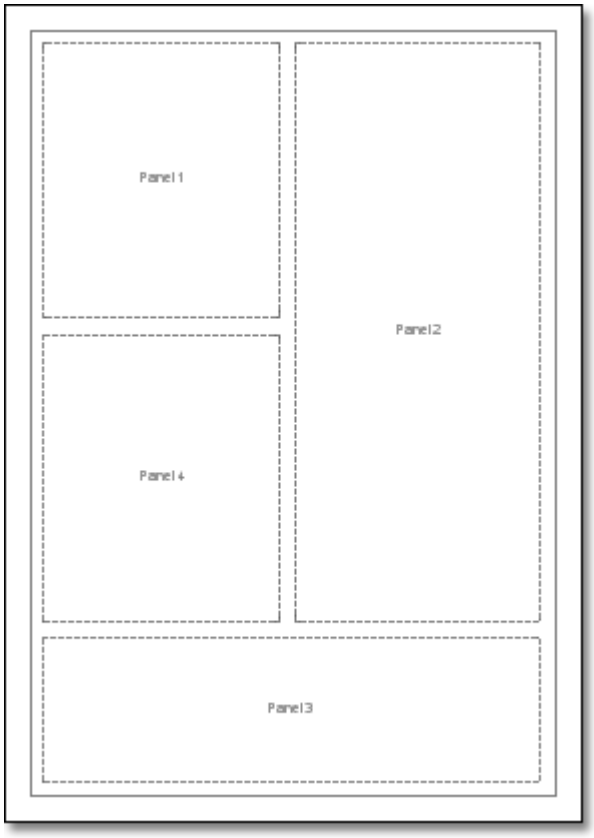
the report template item on which the **TextBox** component is placed.
If the property is set to **true**, then the relation with "owner" is fixed. In other words the **TextBox** component may change the position but it will be referred to the item on what it is fixed.

## 2.24. Panels

Panel is a rectangular region that may contain other components including bands. If to move a panel then all components in it are moved too. The panel can be placed both on a band and on a page. This gives unique abilities in report creation.




### 2.24.1. Placing Bands on Panel

A panel can be placed on  a page, on a band, and on another panel. Almost all components of a report can be paced on a panel. But not all bands can be placed on a panel. A table below shows which bands can placed.

| Band name | It is possible to place a band on a panel |
|---|---|

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| | |
|---|---|
| ReportTitle | No |
| ReportSummary | No |
| PageHeader | No |
| PageFooter | No |
| GroupHeader | Yes |
| GroupFooter | Yes |
| Data | Yes |
| Hierarchical Data | Yes |
| Child | Yes |
| Header | Yes |
| Footer | Yes |

As seen, report bands and page bands cannot be placed on a report. All other bands can be placed on a panel.

## 2.24.2. Placing Panels

There are three ways of placing panels: on a page, on a band and in another panel. The below topics describes all these variants.

### 2.24.2.1. Placing Panels on Page

It is the first way. Basically it is used as organization some independent streams of printing. Panels can be places on any part of a page. Each panel is a small page. So it is allowed placing some small pages with bands and components on one page. So it is possible to render a lot of complex reports.

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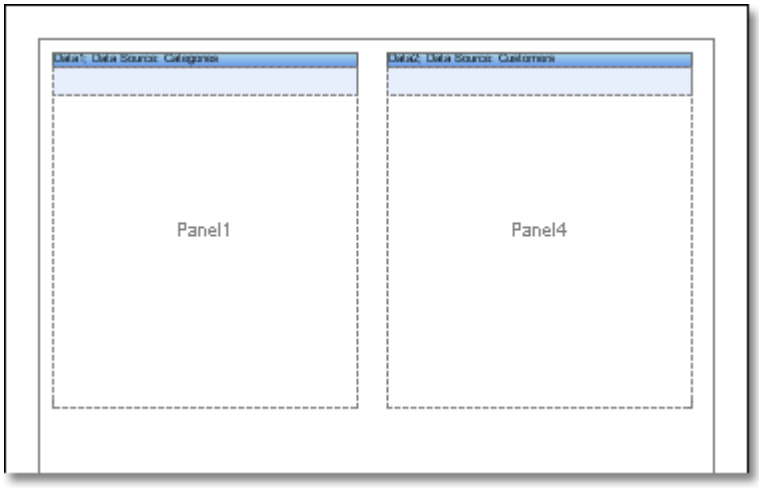
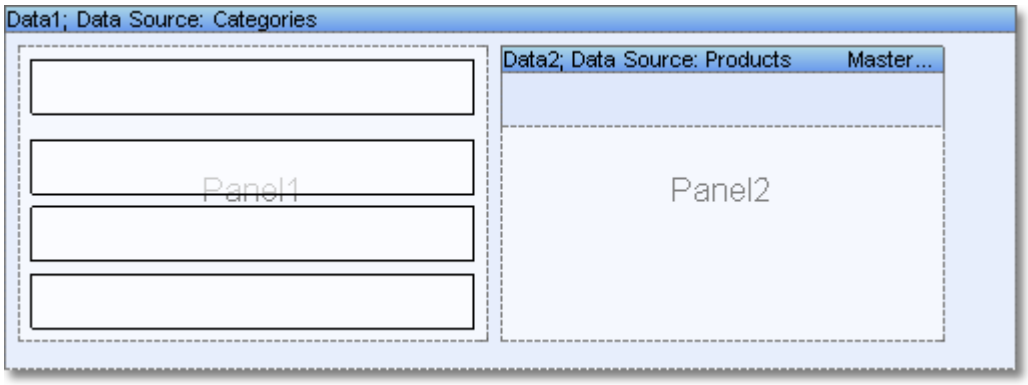



**Notice**. Number of panels on one page is unlimited.

### 2.24.2.2. Placing Panels on Band

The second way is when the panel in placed on a band. This variant is used both for grouping simple components on a panel and to output bands on a band. This allows rendering very complex reports. But it is important to know that the report template can be difficult in "reading".




### 2.24.2.3. Placing Panels on Panel

The third way – when a panel is placed on another panel. This variant is combination of two previous ones. It is very important to know that panels insertion should be used very carefully. Number of insertions in unlimited but such report will not have good look.

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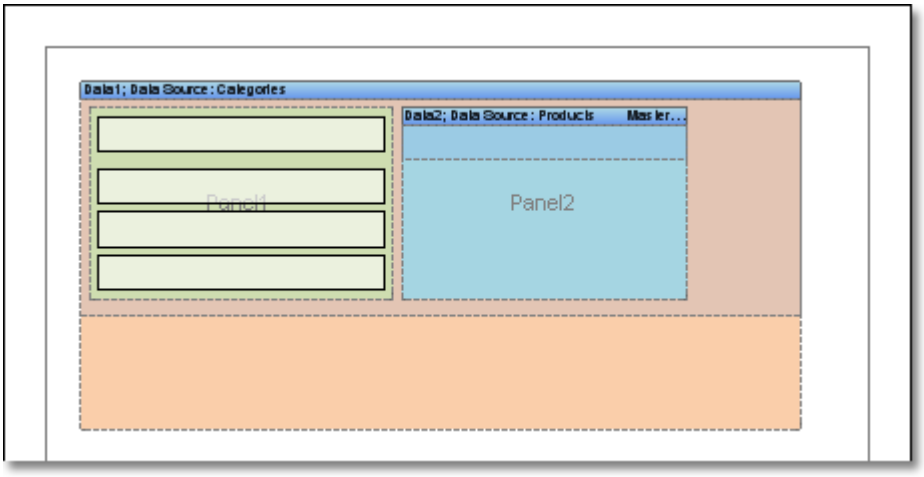
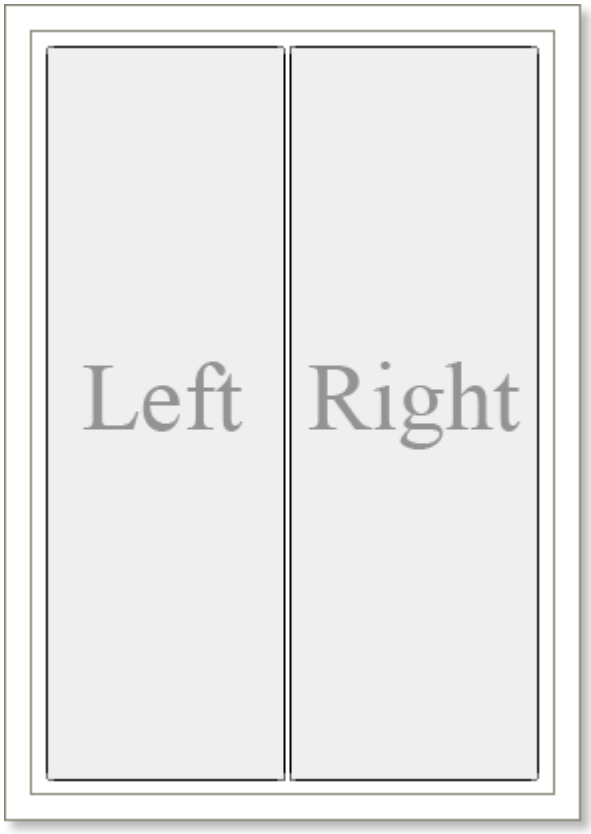



## 2.24.3. Side-by-Side Reports

**Side-by-side** report is a report in what containers can help to speed up report creation. Two lists of rows are output simultaneously in this report. Both lists are independent from each other. Usually it is necessary to use the **Sub report** component to create such a report. But it is much easier to create a report with panels.

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How to build a **Side-by-Side** report. Put two containers on a page. Set the **DockStyle** property of one component to **Left**. Set the **DockStyle** property of the second component to **Right**. Docking component is necessary to take all space on a page by the height. In cases it should not be done. Leave some space between lists to separate them. Put two bands on the first panel: the **Header** band and the **Data** band. The first list will output using these bands. Do the same in the second container. As a result two lists will be output on one page simultaneously.

## 2.24.4. Multiple Tables on One Page

Sometimes it is required to output multiple tables on a page and, what is very important, to output them on different parts of a page. Such report can be rendered using the **Sub Report**. But it is much easier to do this using panels. All it is required to do is to place panels and put band on them. On the picture below a sample of such a report is shown.

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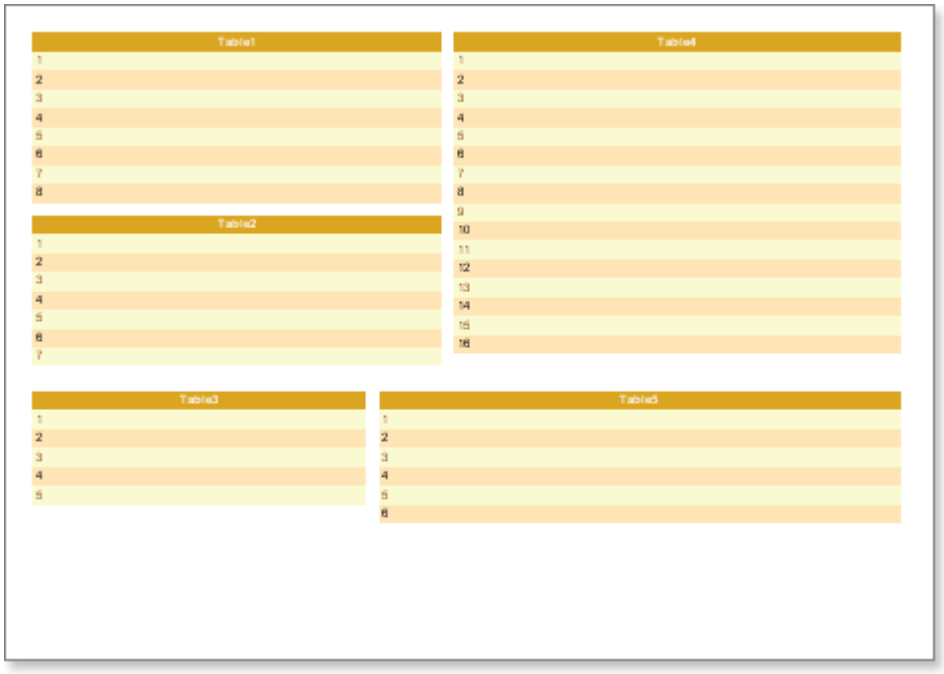


## 2.24.5. Cloning

The unique Clone component is included into Stimulsoft Reports. This component is used to clone parts of a report into a required part of a report. Cloning can be used only in panels.

**Notice**. The **Clone** component can work with the **Panel** component.

How it works? Put a panel on a page. Put bands to output lists. Place a panel on the left part of a page. Place a **Clone** component on the right side of a page. Then, in the **Clone** component designer, indicate the panel that should be cloned. In our case it is the panel that was created on a page.

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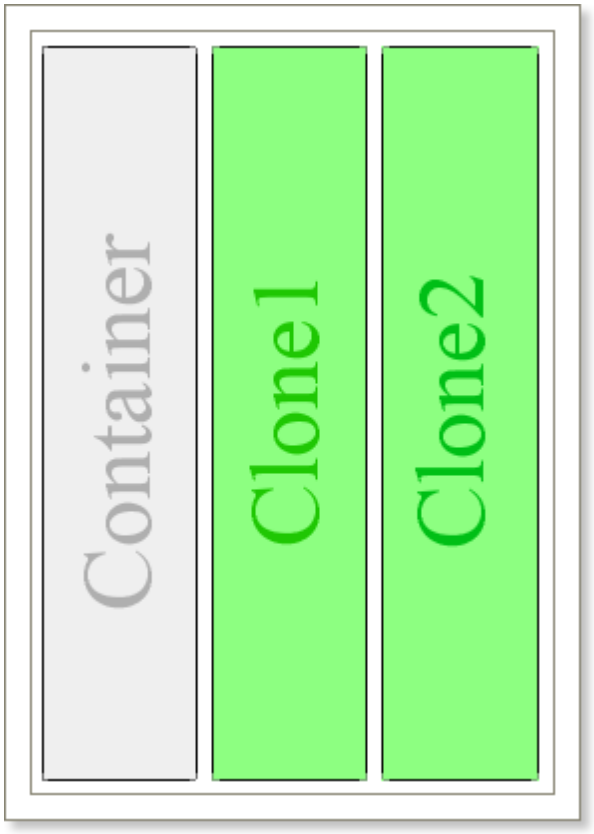


Run a report. The panel will be rendered first. The list will be output on the left side of a page. Then the list will be continued to output on the place where the **Clone** component is placed. The **Clone** component clones all bands of the panel. Using the **Clone** component it is possible to render complex reports with columns. The first column is output using the panel and other columns - using the **Clone** component. It is important to consider the order of placing Clone components on a page.

**Notice**. **Panel** components and their clones will oitput in order of placing components on a page.

## 2.25. Cross Table

The **Cross table** is a special component that is used to process, group and summarize data from the data source. The result is represented as a table. The **Cross table** can be placed both directly on a page or on a **Data** band. If a table that is created as a result of a **cross table** rendering does not fit in the one page, then can be printed on some pages. The component has many properties and settings.

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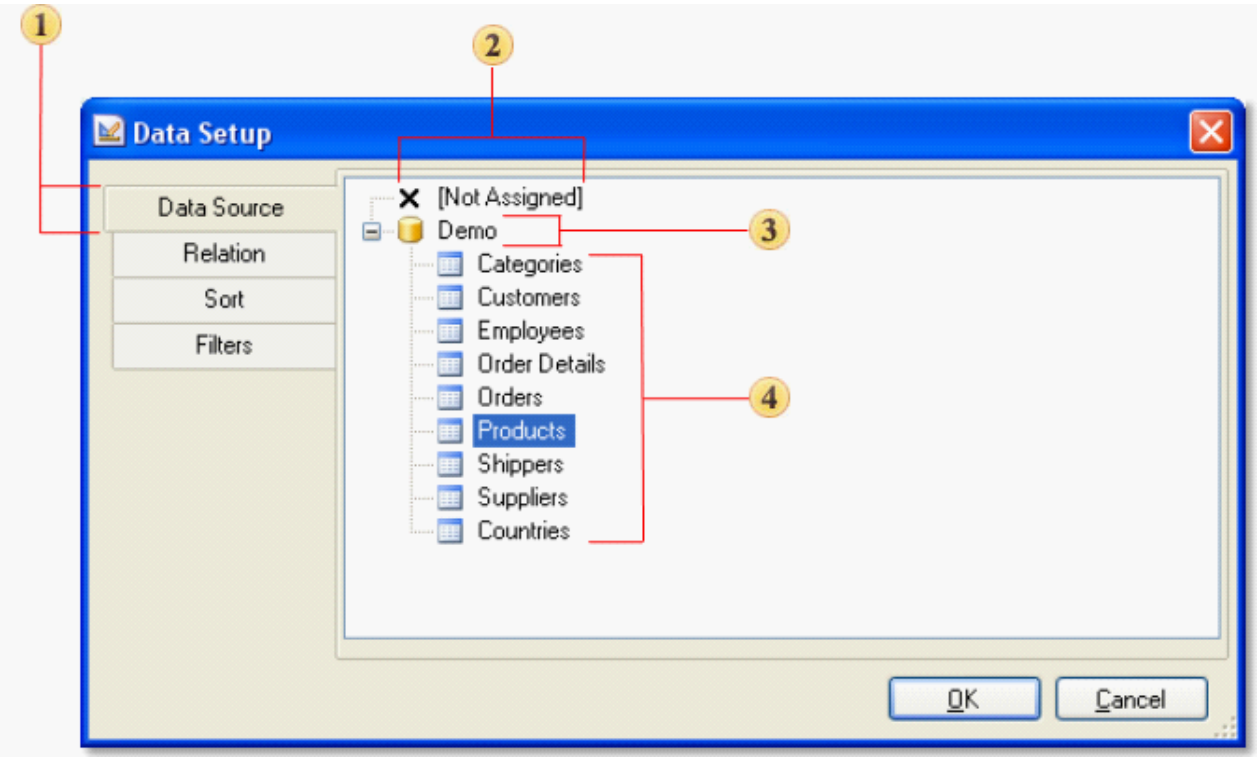
## 2.25.1. Data Source Property

Data are the base for cross table rendering. So the cross table rendering should be started from selecting the data source. The data source can be selected using the Data source.

It is necessary to specify the data source that will be used. There are several ways how to do this. The first way. You may use either the **DataSource** property or the Table editor.

| Data Source | Products |
|---|---|

A data source can be selected by clicking the first tab of the Data band editor. All data sources are grouped in categories. Each category corresponds to one connection with data in the report data dictionary.




1 The tab to select the data source;
2 Select this node if you do not need to specify the data source;
3 The "Demo" data category;
4 The "Demo" data source category.

The second way. The data source can be selected using the cross table editor. It can be called by double click on the cross table.

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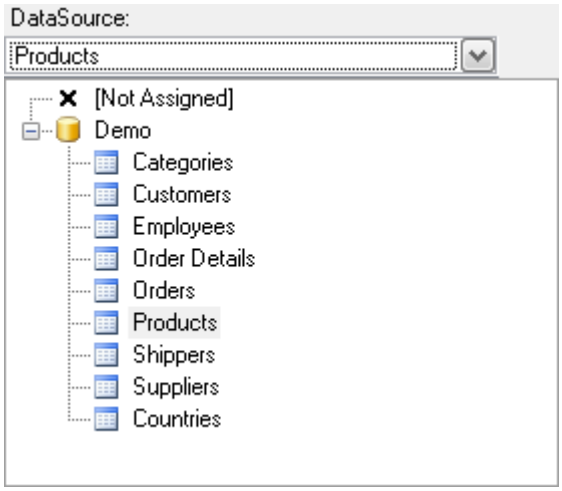


## 2.25.2. Cross Table Items

After selecting the data source you need to specify the following items: columns, rows, and cells for summation.

### 2.25.2.1. Columns

On a picture below you may see how the columns are positioned on a table.

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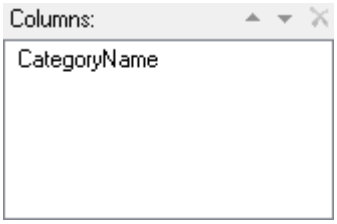
Columns

| Products | CategoryName | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Country | Beverages | Condiments | Confections | Dairy Products | Grains/Cereals | Meat/Poultry | Produce | Seafood | Total |
| Australia | 15 | 24 | 29 | | 38 | | 20 | 42 | 168 |
| Brazil | 20 | | | | | | | | 20 |
| Canada | | 113 | 17 | | | 136 | | | 266 |
| Denmark | | | | | | | | 100 | 100 |
| Finland | 57 | | 75 | | | | | | 132 |
| France | 86 | | | 98 | | | | 62 | 246 |
| Germany | 125 | 32 | 140 | | 22 | | 26 | 10 | 355 |
| Italy | | | | 23 | 57 | | | | 80 |
| Japan | | 39 | | | | 29 | 39 | 55 | 162 |
| Netherlands | | | 51 | | | | | | 51 |
| Norway | | | | 164 | | | | | 164 |
| Singapore | 17 | 27 | | | 26 | | | | 70 |
| Spain | | | | 108 | | | | | 108 |
| Sweden | | | | | 165 | | | 224 | 389 |
| UK | 56 | 13 | 74 | | | | | | 143 |
| USA | 183 | 259 | | | | | 15 | 208 | 665 |
| Total | 559 | 507 | 386 | 393 | 308 | 165 | 100 | 701 | 3119 |

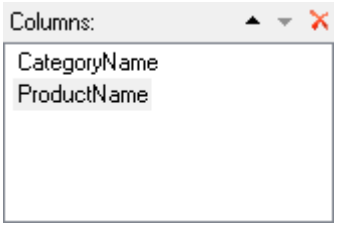
It is allowed to specify one or several columns at once. For example, in cross table only one column is specified:




As a result we get grouping by values of this column:

| CategoryName | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Beverages | Condiments | Confections | Dairy Products | Grains/Cereals | Meat/Poultry | Produce | Seafood | Total |

If to specify more than one column:

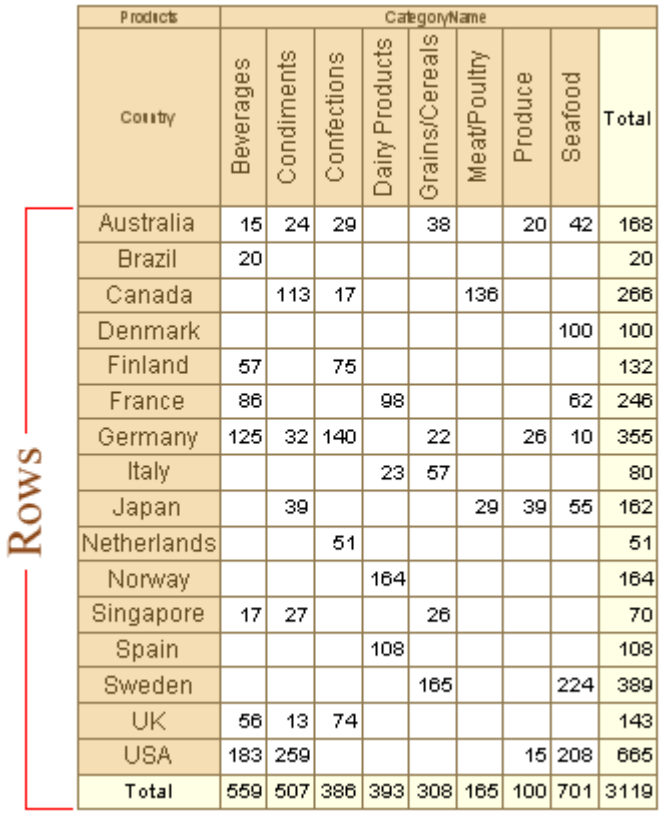



Grouping is output by values of two columns. Values of the first column are output first. Then the value from the second column is output:

| CategoryName, ProductName | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Beverages | | | | | | | | | | | | | Condiments | | | | | | | | | | | |
| Chai | Chang | Chartreuse verte | Côte de Blaye | Guaraná Fantástica | Ipoh Coffee | Lakkalikööri | Lagerbier Lumberjack Lager | Outback Lager | Rhönbräu Klosterbier | Sasquatch Ale | Steeleye Stout | Total | Aniseed Syrup | Chef Anton's Cajun Seasoning | Chef Anton's Gumbo Mix | Genen Shouyu | Grandma's Boysenberry Spread | Gula Malacca | Louisiana Fiery Hot Pepper Sauce | Louisiana Hot Spiced Okra | Northwoods Cranberry Sauce | Original Frankfurter grüne Soße | Sirop d'érable | Vegie-spread | Total |

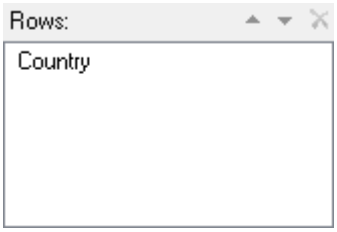
### 2.25.2.2. Rows

On a picture below you may see how the rows are positioned on a table.




| Products / Country | Beverages | Condiments | Confections | Dairy Products | Grains/Cereals | Meat/Poultry | Produce | Seafood | Total |
|---|---|---|---|---|---|---|---|---|---|
| Australia | 15 | 24 | 29 | | 38 | | 20 | 42 | 168 |
| Brazil | 20 | | | | | | | | 20 |
| Canada | | 113 | 17 | | | 136 | | | 266 |
| Denmark | | | | | | | | 100 | 100 |
| Finland | 57 | | 75 | | | | | | 132 |
| France | 86 | | | 98 | | | | 62 | 246 |
| Germany | 125 | 32 | 140 | | 22 | | 26 | 10 | 355 |
| Italy | | | | 23 | 57 | | | | 80 |
| Japan | | 39 | | | | 29 | 39 | 55 | 162 |
| Netherlands | | | 51 | | | | | | 51 |
| Norway | | | | 164 | | | | | 164 |
| Singapore | 17 | 27 | | | 26 | | | | 70 |
| Spain | | | | 108 | | | | | 108 |
| Sweden | | | | | 165 | | | 224 | 389 |
| UK | 56 | 13 | 74 | | | | | | 143 |
| USA | 183 | 259 | | | | | 15 | 208 | 665 |
| Total | 559 | 507 | 386 | 393 | 308 | 165 | 100 | 701 | 3119 |

Grouping is done only by its values for one row:




Get the result shown on a picture below. All values of the specified row are represented in one level.

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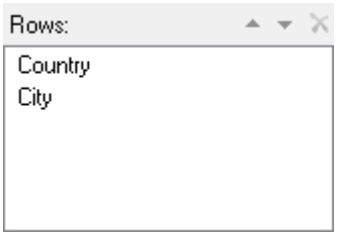
| Country |
|---|
| Australia |
| Brazil |
| Canada |
| Denmark |
| Finland |
| France |
| Germany |
| Italy |
| Japan |
| Netherlands |
| Norway |
| Singapore |
| Spain |
| Sweden |
| UK |
| USA |
| **Total** |

Specify two rows:




A cross table is grouped in two levels vertically:

| Country | City |
|---|---|
| Australia | Melbourne |
| | Sydney |
| | **Total** |
| Brazil | Sao Paulo |
| | **Total** |
| Canada | Montréal |
| | Ste-Hyacinthe |
| | **Total** |

In a cross table you may not specify columns or rows. For example, if columns are not specified,

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then grouping will be done by rows. For some reports this property is very important for a cross table. The picture below shows one those reports:

| CategoryName | CompanyName | UnitsInStock |
|---|---|---|
| Beverages | Aux joyeux ecclésiastiques | 281,5 |
| | Bigfoot Breweries | 46 |
| | Exotic Liquids | 37 |
| | Karkki Oy | 18 |
| | Leka Trading | 46 |
| | Pavlova, Ltd. | 15 |
| | Plutzer Lebensmittelgroßmärkte AG | 7,75 |
| | Refrescos Americanas LTDA | 4,5 |
| | Total | 455,75 |
| Condiments | Exotic Liquids | 10 |
| | Forêts d'érables | 28,5 |
| | Grandma Kelly's Homestead | 65 |
| | Leka Trading | 19,45 |
| | Mayumi's | 15,5 |
| | New Orleans Cajun Delights | 81,40 |
| | Pavlova, Ltd. | 43,9 |
| | Plutzer Lebensmittelgroßmärkte AG | 13 |
| | Total | 276,75 |

### 2.25.2.3. Summary Cells

Summary cells are the elements of a cross table, which set rules for cells formatting on intersection of columns and rows of a summary cell. On a picture below the structure of a simplest cross table is represented.

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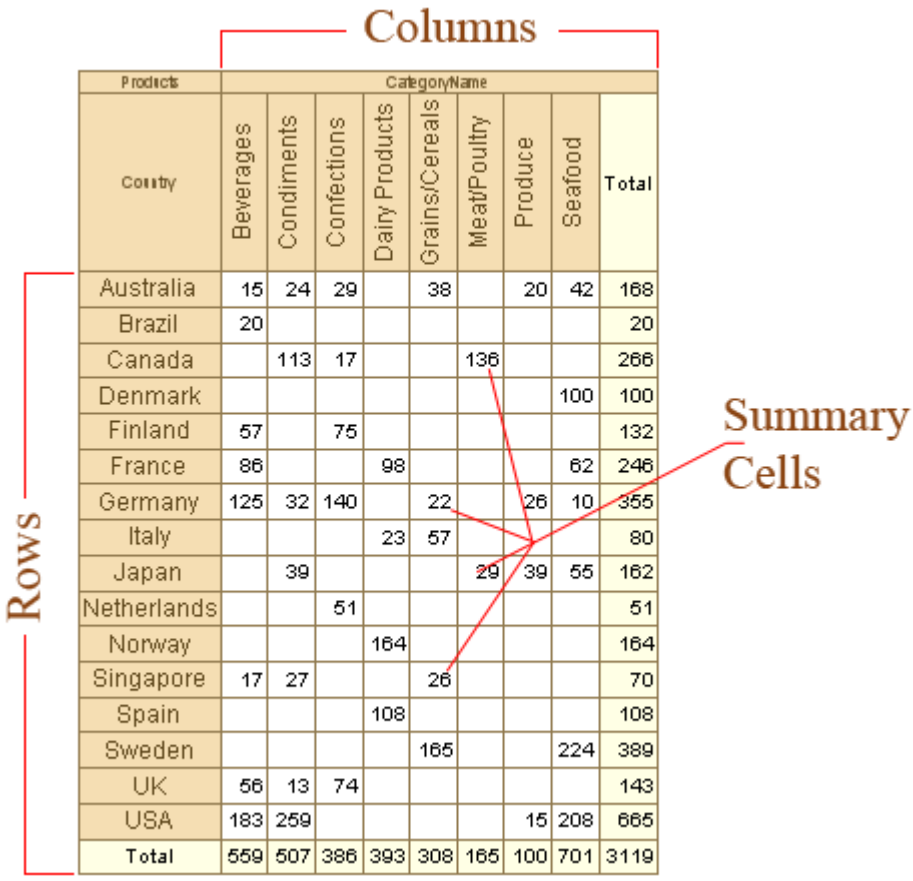


In a summary cell all values from the data source which are suitable for a particular condition are grouped. The condition is the coincidence of the value of the column and the row from a data source with the value of the column and row of a cross-table. The value of a cross table column and a row is indicated by intersection where the summary cell is placed. For example, see a simple cross table on a picture below:

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| Products | CategoryName | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Country | Beverages | Condiments | Confections | Dairy Products | Grains/Cereals | Meat/Poultry | Produce | Seafood | Total |
| Australia | 15 | 24 | 29 | | 38 | | 20 | 42 | 168 |
| Brazil | 20 | | | | | | | | 20 |
| Canada | | 113 | 17 | | | 136 | | | 266 |
| Denmark | | | | | | | | 100 | 100 |
| Finland | 57 | | 75 | | | | | | 132 |
| France | 86 | | | 98 | | | | 62 | 246 |
| Germany | 125 | 32 | 140 | | 22 | | 26 | 10 | 355 |
| Italy | | | | 23 | 57 | | | | 80 |
| Japan | | 39 | | | | 29 | 39 | 55 | 162 |
| Netherlands | | | 51 | | | | | | 51 |
| Norway | | | | 164 | | | | | 164 |
| Singapore | 17 | 27 | | | 26 | | | | 70 |
| Spain | | | | 108 | | | | | 108 |
| Sweden | | | | | 165 | | | 224 | 389 |
| UK | 56 | 13 | 74 | | | | | | 143 |
| USA | 183 | 259 | | | | | 15 | 208 | 665 |
| Total | 559 | 507 | 386 | 393 | 308 | 165 | 100 | 701 | 3119 |

The red rectangle indicates the summary cell with the 140 values and also a column and a row of this cell. In this cell all values from the data source which CategoryName column is equal to **Confection** and Country row is equal to **Germany** were grouped. The rules of grouping are set using the **Summary** property of a summary cell.

If more than one summary cell is set in a Cross table then it is possible to define the direction of placing of these cells. The reporting tool can place them horizontally from left to right or vertically from top to bottom. On a picture below a table with horizontally placed summary cells is shown.

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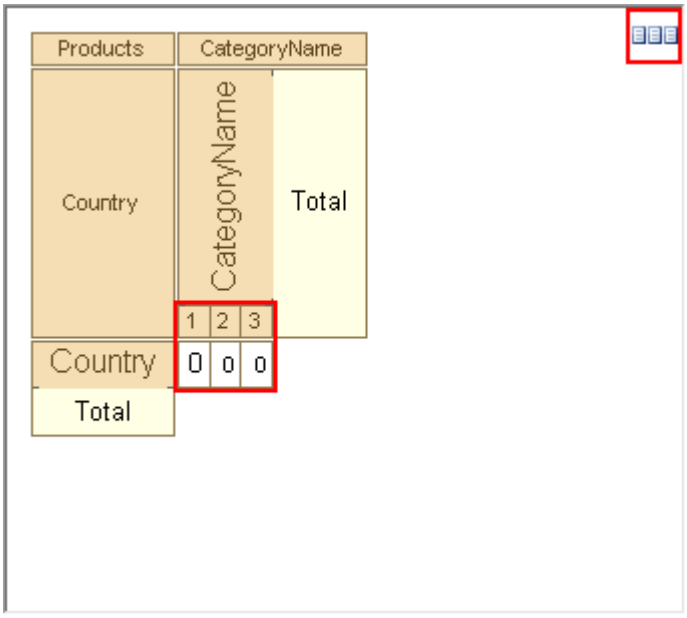
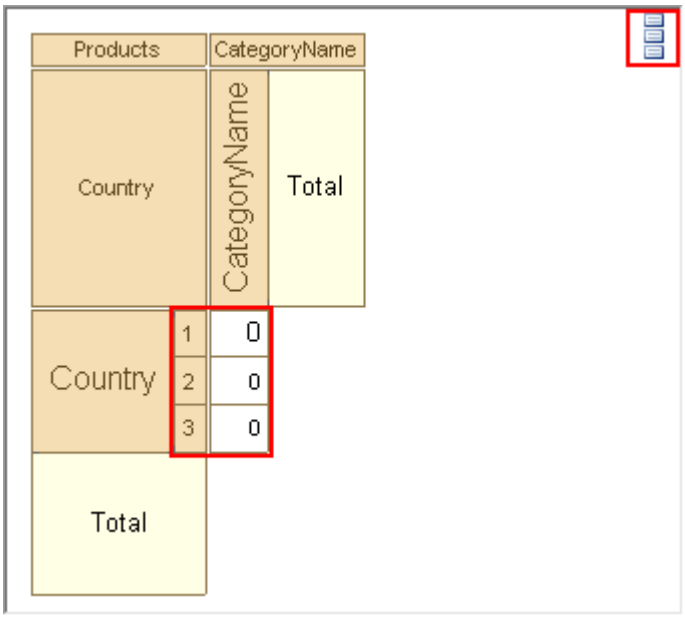



On a picture below a table with vertically placed summary cells is shown.




## 2.25.3. Cross Table Editor

For editing a cross table the Cross Table editor is used. The editor is divided in four zones: data source selection, columns, rows and cells selection, cross table preview and a property grid.

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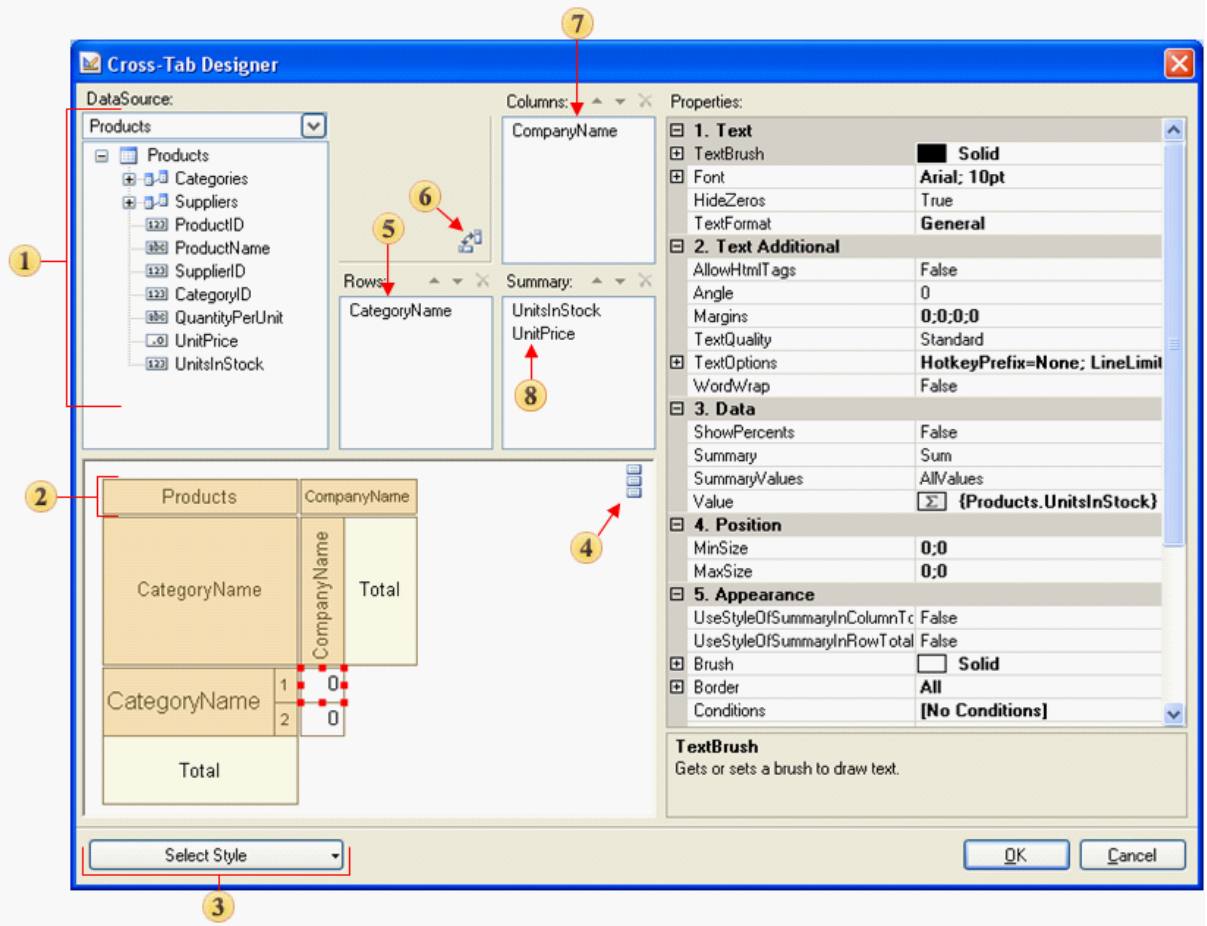


1 The Data source that is used for the table creation;
2 The Table Header;
3 Select a style of the table appearance;
4 Change the direction of summary in a table;
5 The list of rows;
6 This button is used to change columns and rows;
7 A list of columns;
8 A list of Summaries.

## 2.25.4. Data Summary Types

When rendering a cross-table, the report generator should know how the values in the summary cells will be summarize. Summation function is set using the Summary property of a summary cell. For each summary cell its own function can be specified. A Cross-table works with the following functions:

| Function | Description |
|---|---|
| **None** | Do not summarize the cell values |

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| | |
|---|---|
| **Sum** | Returns the sum of values that are contained in the cell |
| **Average** | Returns the average of values that are contained in the cell |
| **Min** | Returns the minimal of values that are contained in the cell |
| **Max** | Returns the maximal of values that are contained in the cell |
| **Count** | Returns the number of values that are contained in the cell |
| **CountDistinct** | Returns the number of distinct values that are contained in the cell |
| **Image** | A cross table will show the first value as an image |

In addition to the Summary property, there is another property that affects on the summary. This is the Summary Values property. This property identifies and process the 0 and null values when calculating totals.

## 2.25.5. Sort Direction

The values of the source data that are used to group rows and columns are always re-sorted with the component of a cross-table. Resorting is necessary in order that, when showing a cross-table, rows and columns do not contain duplicates. But this behavior can be changed. The type sorting is specified using two properties: **SortDirection** and **SortType**. These properties are available for columns and rows of a cross-table.

| | |
|---|---|
| SortDirection | Asc |
| SortType | ByDisplayValue |

Using the **SortDirection** property it is possible to set the direction of sorting. Sorting can be in ascending order, descending, or no sorting. The **SortType** property sets the source of values for sorting: by value or by the displayed value. The picture below shows a table, sorted in two different directions.

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| Country | UnitsInStock |
|---|---|
| Australia | 168 |
| Brazil | 20 |
| Canada | 266 |
| Denmark | 100 |
| Finland | 132 |
| France | 246 |
| Germany | 355 |
| Italy | 80 |
| Japan | 162 |
| Netherlands | 51 |
| Norway | 164 |
| Singapore | 70 |
| Spain | 108 |
| Sweden | 389 |
| UK | 143 |
| USA | 665 |
| Total | 3119 |

| Country | UnitsInStock |
|---|---|
| USA | 665 |
| UK | 143 |
| Sweden | 389 |
| Spain | 108 |
| Singapore | 70 |
| Norway | 164 |
| Netherlands | 51 |
| Japan | 162 |
| Italy | 80 |
| Germany | 355 |
| France | 246 |
| Finland | 132 |
| Denmark | 100 |
| Canada | 266 |
| Brazil | 20 |
| Australia | 168 |
| Total | 3119 |

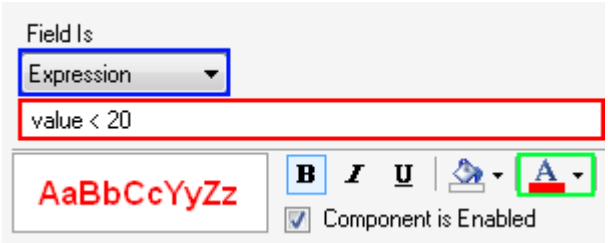
## 2.25.6. Conditions

Often, when rendering a cross-table, it is necessary that, according to certain conditions, the appearance of a cell will be changed. To achieve this, you can use the Conditions property of columns, rows and, summary cells.

| Conditions | **[No Conditions]** |
|---|---|

In order to specify the condition, it is necessary to select a component for what this condition will be executed and call the Conditons editor from the properties panel or from the toolbars.

For example, we need to mark summary cells which values are less than 20.
Add a new conditional formatting for the cell. Make three changes in the condition (see picture below).




Change the value of the Field Is field on the Expression (marked with blue). Specify the required expression (marked with red):

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value <20

The value variable contains the total value of the summary cell. And change the text color of cells to red (marked with green). An example of report rendering is shown on the picture below.

| Products | CategoryName | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Country | Beverages | Condiments | Confections | Dairy Products | Grains/Cereals | Meat/Poultry | Produce | Seafood | Total |
| Australia | 15 | 24 | 29 | | 38 | | 20 | 42 | 168 |
| Brazil | 20 | | | | | | | | 20 |
| Canada | | 113 | 17 | | | 136 | | | 266 |
| Denmark | | | | | | | | 100 | 100 |
| Finland | 57 | | 75 | | | | | | 132 |
| France | 86 | | | 98 | | | | 62 | 246 |
| Germany | 125 | 32 | 140 | | 22 | | 26 | 10 | 355 |
| Italy | | | | 23 | 57 | | | | 80 |
| Japan | | 39 | | | | 29 | 39 | 55 | 162 |
| Netherlands | | | 51 | | | | | | 51 |
| Norway | | | | 164 | | | | | 164 |
| Singapore | 17 | 27 | | | 26 | | | | 70 |
| Spain | | | | 108 | | | | | 108 |
| Sweden | | | | | 165 | | | 224 | 389 |
| UK | 56 | 13 | 74 | | | | | | 143 |
| USA | 183 | 259 | | | | | 15 | 208 | 665 |
| Total | 559 | 507 | 386 | 393 | 308 | 165 | 100 | 701 | 3119 |

## 2.25.7. Showing Totals

**Rows** and **Columns** of a cross-table have the **ShowTotal** property, which allows you to show or hide totals by rows and columns. If this property for **Rows** and **Columns** is set to **true**, then the totals by rows and columns are visually displayed. The picture below shows an example of a cross-table with a visually displayed results:

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| Products / Country | Category/Name | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Beverages | Condiments | Confections | Dairy Products | Grains/Cereals | Meat/Poultry | Produce | Seafood | Total |
| Australia | 15 | 24 | 29 | | 38 | | 20 | 42 | 168 |
| Brazil | 20 | | | | | | | | 20 |
| Canada | | 113 | 17 | | | 136 | | | 266 |
| Denmark | | | | | | | | 100 | 100 |
| Finland | 57 | | 75 | | | | | | 132 |
| France | 86 | | | 98 | | | | 62 | 246 |
| Germany | 125 | 32 | 140 | | 22 | | 26 | 10 | 355 |
| Italy | | | | 23 | 57 | | | | 80 |
| Japan | | 39 | | | | 29 | 39 | 55 | 162 |
| Netherlands | | | 51 | | | | | | 51 |
| Norway | | | | 164 | | | | | 164 |
| Singapore | 17 | 27 | | | 26 | | | | 70 |
| Spain | | | | 108 | | | | | 108 |
| Sweden | | | | | 165 | | | 224 | 389 |
| UK | 56 | 13 | 74 | | | | | | 143 |
| USA | 183 | 259 | | | | | 15 | 208 | 665 |
| Total | 559 | 507 | 386 | 393 | 308 | 165 | 100 | 701 | 3119 |

If, for example, the **ShowTotal** property is set to **false** for rows, then the total by rows will not be displayed. The picture below shows an example of a cross-table, where the **ShowTotal** property of rows is set to **false**:

| Products / Country | Category/Name | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Beverages | Condiments | Confections | Dairy Products | Grains/Cereals | Meat/Poultry | Produce | Seafood | Total |
| Australia | 15 | 24 | 29 | | 38 | | 20 | 42 | 168 |
| Brazil | 20 | | | | | | | | 20 |
| Canada | | 113 | 17 | | | 136 | | | 266 |
| Denmark | | | | | | | | 100 | 100 |
| Finland | 57 | | 75 | | | | | | 132 |
| France | 86 | | | 98 | | | | 62 | 246 |
| Germany | 125 | 32 | 140 | | 22 | | 26 | 10 | 355 |
| Italy | | | | 23 | 57 | | | | 80 |
| Japan | | 39 | | | | 29 | 39 | 55 | 162 |
| Netherlands | | | 51 | | | | | | 51 |
| Norway | | | | 164 | | | | | 164 |
| Singapore | 17 | 27 | | | 26 | | | | 70 |
| Spain | | | | 108 | | | | | 108 |
| Sweden | | | | | 165 | | | 224 | 389 |
| UK | 56 | 13 | 74 | | | | | | 143 |
| USA | 183 | 259 | | | | | 15 | 208 | 665 |

If, for example, the **ShowTotal** property for columns is set to **false**, then total by columns will not be displayed. The picture below shows an example of a cross-table, where the **ShowTotal** property of columns is set to **false**:

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| Products | Category Name | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Country | Beverages | Condiments | Confections | Dairy Products | Grains/Cereals | Meat/Poultry | Produce | Seafood |
| Australia | 15 | 24 | 29 | | 38 | | 20 | 42 |
| Brazil | 20 | | | | | | | |
| Canada | | 113 | 17 | | | 136 | | |
| Denmark | | | | | | | | 100 |
| Finland | 57 | | 75 | | | | | |
| France | 86 | | | 98 | | | | 62 |
| Germany | 125 | 32 | 140 | | 22 | | 26 | 10 |
| Italy | | | | 23 | 57 | | | |
| Japan | | 39 | | | | 29 | 39 | 55 |
| Netherlands | | | 51 | | | | | |
| Norway | | | | 154 | | | | |
| Singapore | 17 | 27 | | | 26 | | | |
| Spain | | | | 108 | | | | |
| Sweden | | | | | 165 | | | 224 |
| UK | 56 | 13 | 74 | | | | | |
| USA | 183 | 259 | | | | | 15 | 208 |
| Total | 559 | 507 | 386 | 393 | 308 | 165 | 100 | 701 |

By default, the **ShowTotal** property for rows and columns is set to **true**, i.e. totals by rows and columns are displayed.

## 2.25.8. Processing Values for Summary

The **Cross-table** has the **SummaryValues** property, which allows you to display the total number of values of the cross-table, considering or not considering to 0 and/or null values. The **SummaryValues** property can take three values, depending on the value of the property, the number of values will be displayed as a result. Values of the **SummaryValues** property and their description are described in the table below:

| Function | Description |
|---|---|
| **AllValues** | All values, contained in a cell |
| **SkipZerosAndNulls** | Skip **0** **null** values, contained in a cell |
| **SkipNulls** | Skip **null** values, contained in a cell |

## 2.25.9. Word Wrap

Each component of the cross-table has the **WordWrap** property, which lets you wrap text from one line to another. If the **WordWrap** property is set to **false**, then the text is in one line, and if it does not fit in one line it will be cut. The picture below shows an example of a cross-table with the **WordWrap** property set to **false**:

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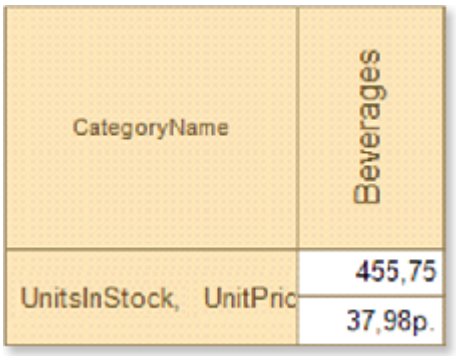
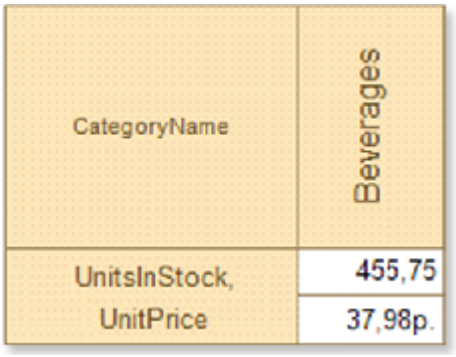



If the **WordWrap** property is set to **true**, then text wrapping goes automatically. When wrapping a text on the new line the vertical and horizontal alignment are taken into the account. The picture below shows an example of a cross-table that has the **WordWrap** property set to **true**:




By default, the **WordWrap** property of cross-table components is set to **false**.

## 2.26. Charts

**Column Area**

Data that is arranged in columns or rows. Column charts are useful for showing data changes over a period of time or for illustrating comparisons among items:
**Clustered Column**
Clustered column charts compare values across categories.

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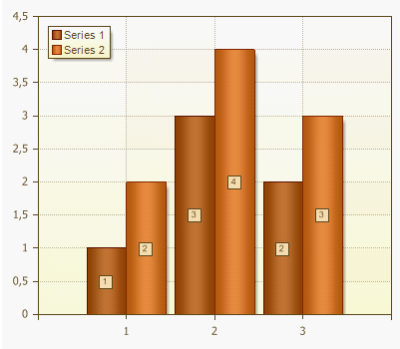
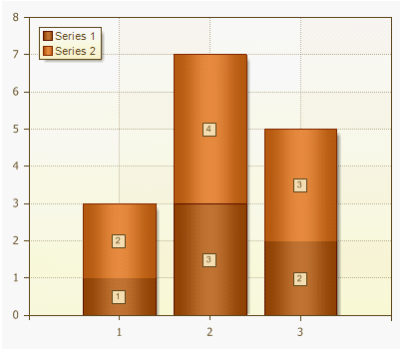
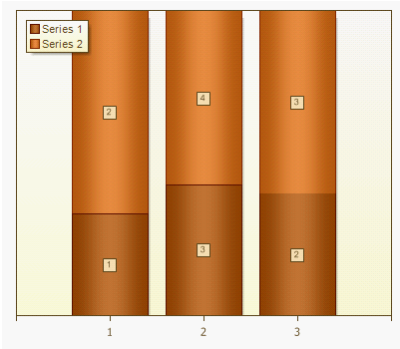



**Stacked Column**
Stacked column charts show the relationship of individual items to the whole, comparing the contribution of each value to a total across categories.




**Full-Stacked Column**
Full-Stacked column allows comparing the percentage of each value.




## Bar Area

Data that is arranged in columns or rows on a worksheet can be plotted in a bar chart. Bar charts illustrate comparisons among individual items. Bar Area should be used if:

- Ticks are long.
- If a values show duration.

**Clustered Bar**
Clustered bar charts compares values across categories. In a clustered bar chart, the categories are

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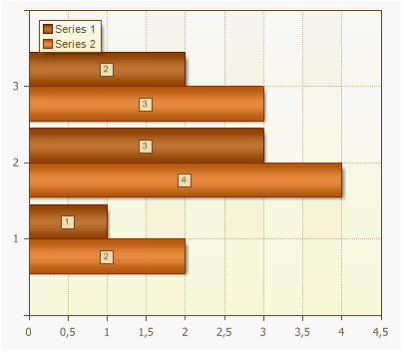
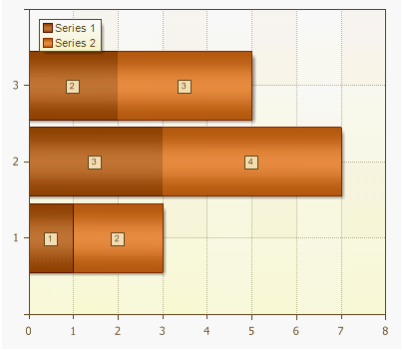
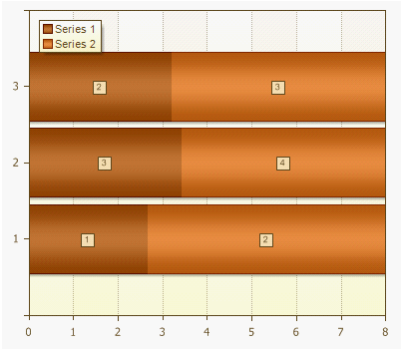
typically organized along the vertical axis, and the values along the horizontal axis.




**Stacked Bar**
Stacked bar charts show the relationship of individual items to the whole.




**Full-Stacked Bar**
This type of charts allows comparing percentage of each value with the total inside the category.




**Pie Area**

Data that is arranged in one column or row only on a worksheet can be plotted in a pie chart. In a pie chart, the arc length of each sector, is proportional to the quantity it represents. Together, the sectors create a full disk.
Pie charts should be used if:

- It is required to show one row of data;
- All values are positive and greater than 0;

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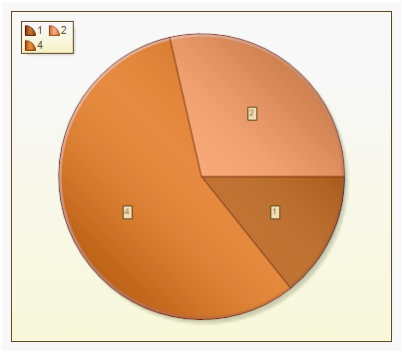
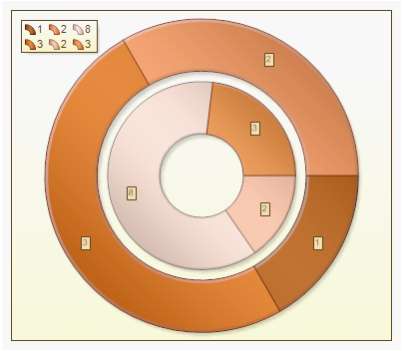
- A values belongs to no more than 7 categories;
- Categories corresponds to some parts of the whole chart disk.

**Pie**
Pie charts display the contribution of each value to a total. It is possible to manually pull out the slices of a pie chart to emphasize them.



**Doughnut**
A doughnut chart is functionally similar to a pie chart, with the exception of a blank center and the ability to support multiple statistics as one.



**Line Area**

Data that is arranged in columns or rows on a worksheet can be plotted in a line chart. Line charts can display continuous data over time, set against a common scale, and are therefore ideal for showing trends in data at equal intervals.

**Line**
Line and line with markers are used to indicate individual data values, line charts are useful to show trends over time or ordered categories, especially when there are many data points and the order in which they are presented is important.

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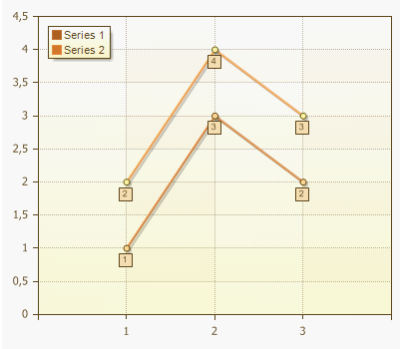
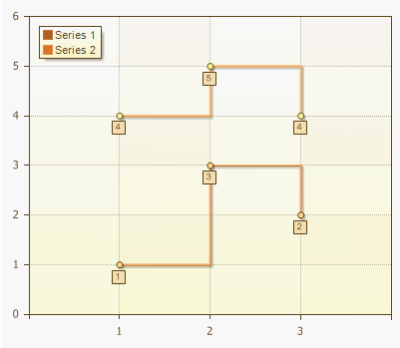
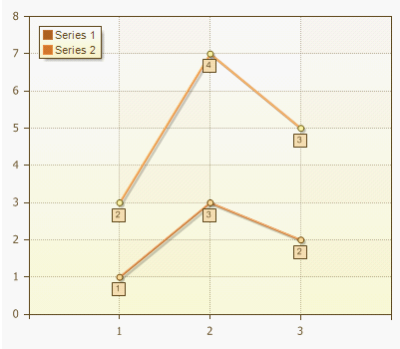



**Stepped Line**




**Stacked Line**

Displayed with or without markers to indicate individual data values, stacked line charts are useful to show the trend of the contribution of each value over time or ordered categories. If there are many categories or the values are approximate, you should use a stacked line chart without markers.




**Full-Stacked Line**

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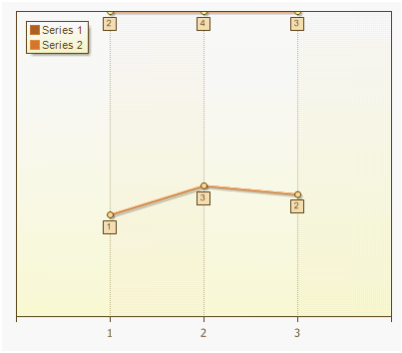
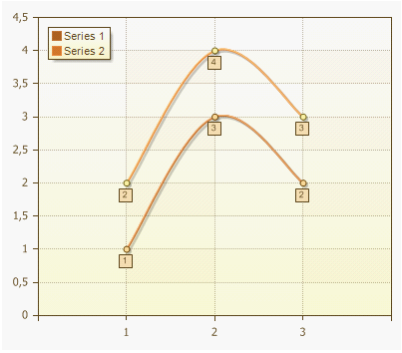
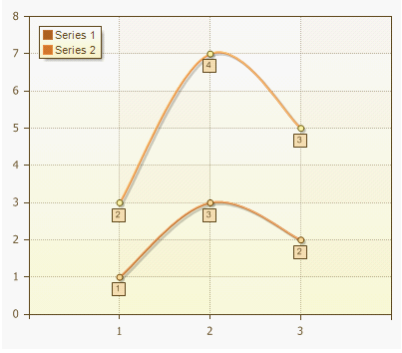



**Spline Area**

**Spline**




**Stacked Spline**




**Full-Stacked Spline**

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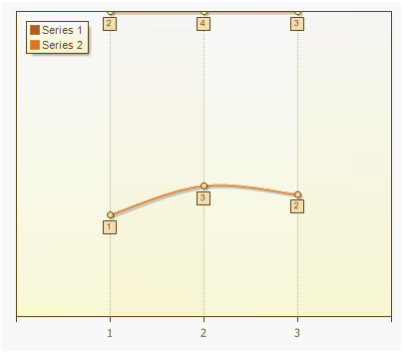
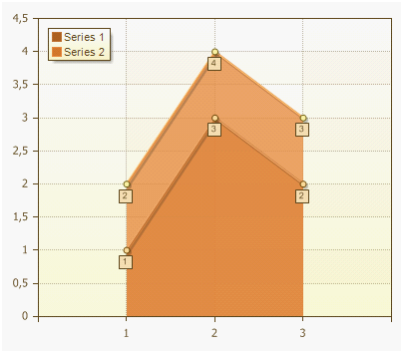


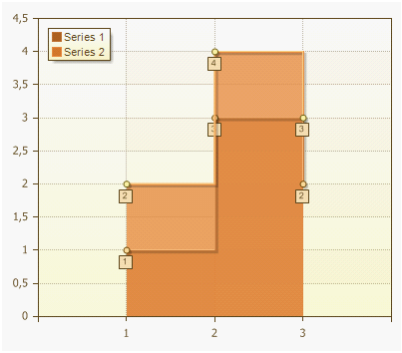

**Area**

Data that is arranged in columns or rows on a worksheet can be plotted in an area chart. Area charts illustrate changes depending on time period and can be used to attract attention to summary value in compliance with trend. For example, data which shows profit depending on time can be created in Area charts to attract attention to total profit.

**Area**
Area charts display the trend of values over time or categories.




**Stepped Area**




**Stacked Area**
Stacked area charts display the trend of the contribution of each value over time or categories.

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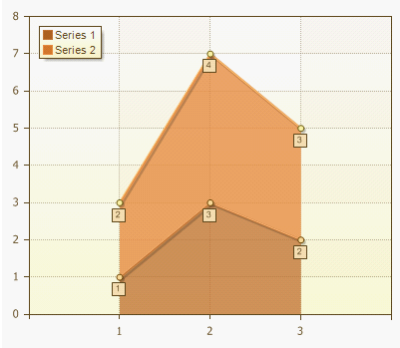
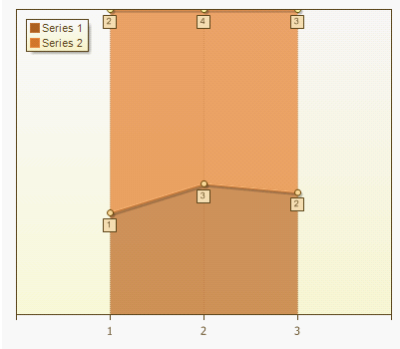


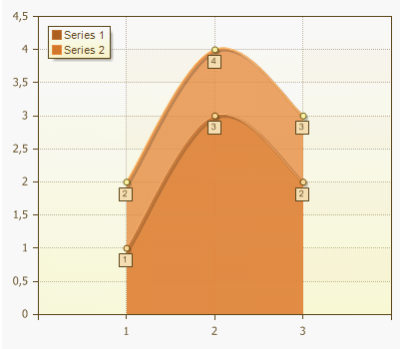

**Full-Stacked Area**

Full-Stacked Area charts display the trend of the percentage each value contributes over time or categories.




**Spline Area**

**Spline Area**




**Stacked Spline Area**

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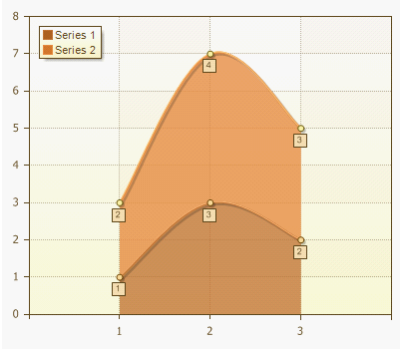
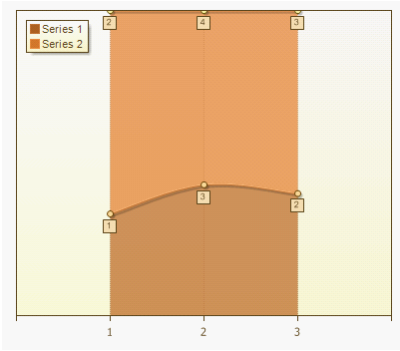


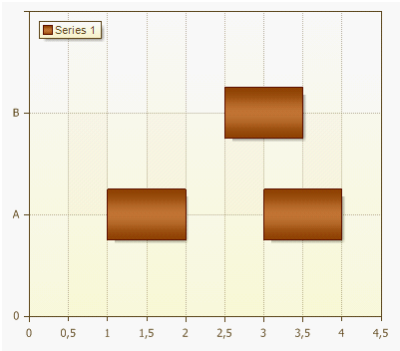

**Full-Stacked Spline Area**




**Gantt Area**

A Gantt chart is a type of bar chart that illustrates a project schedule.

**Gantt**
Gantt charts illustrate the start and finish dates of the terminal elements and summary elements of a project.




**Scatter Area**

Data that is arranged in columns and rows on a worksheet can be plotted in an xy (scatter) chart. Scatter charts show the relationships among the numeric values in several data series, or plots two

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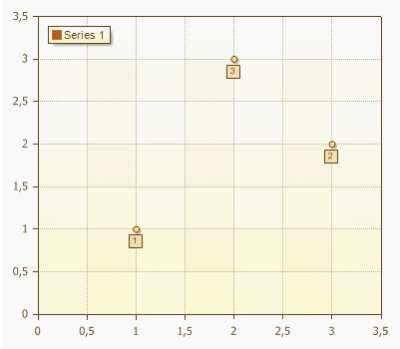
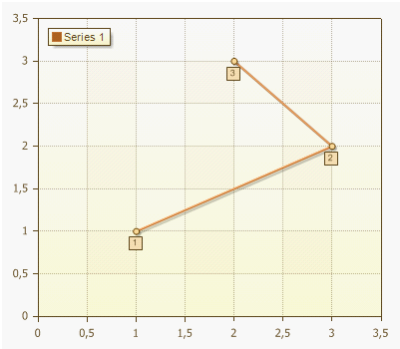
groups of numbers as one series of xy coordinates.
A scatter chart has two value axes, showing one set of numerical data along the horizontal axis (x-axis) and another along the vertical axis (y-axis). It combines these values into single data points and displays them in uneven intervals, or clusters. Scatter charts are commonly used for displaying and comparing numeric values, such as scientific, statistical, and engineering data.
Scatter charts should be used if:

- It is required to change the scale of the horizontal axis;
- Values for horizontal axis are not evenly spaced;
- There are many data points on the horizontal axis;
- It is required to show similarities between large sets of data instead of differences between data points;
- It is required to compare large numbers of data points without regard to time - the more data that you include in a scatter chart, the better the comparisons that you can make.

**Scatter**
This type of chart compares pairs of values. Use a scatter chart without lines when you have data in a specific order.




**Scatter Line**
This type of chart can be displayed with or without straight connecting lines between data points. These lines can be displayed with or without markers.




**Scatter Spline**
This type of chart can be displayed with or without a smooth curve connecting the data points. These lines can be displayed with or without markers. Use the scatter chart without markers if there are many data points.

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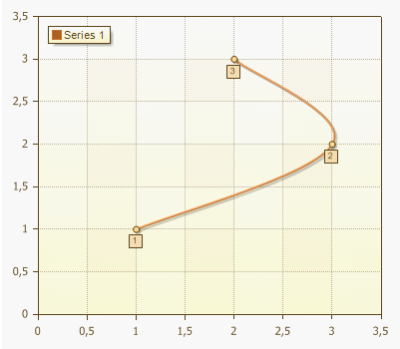


## 2.26.1. Chart Properties

### Main Properties

#### 1. Chart

| Property name | Description |
|---|---|
| **Chart Type** | Chart Type |
| **Area** | Properties of the current area |
| **Legend** | Properties of the chart legend |
| **Series** | A collection of chart series |
| **Series Labels** | Properties of series labels |
| **Style** | Sets a Chart style |

#### 2. Chart Additional

| Property name | Description |
|---|---|
| **Constant Lines** | Sets a collection of constant lines of chart |
| **Process at End** | Sets that a chart is processed at the end of the report execution |
| **Horizontal Spacing** | Sets horizontal spacing between the chart area and axis area |
| **Vertical Spacing** | Sets vertical spacing between the chart area and axis area |
| **Strips** | Sets a collection of chart strips |
| **Title** | Sets chart title properties |

#### 3. Data

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| Property name | Description |
|---|---|
| **Data Source** | Get data source that is used for getting data |
| **Data Relation** | Get the link that is used for master-detail reports rendering |
| **Master Component** | Gets or sets the master component |
| **Count Data** | Gets or sets the count of rows for virtual data |
| **Filter On** | Gets or sets value indicates, that the filter is on |
| **Filters** | Gets or sets a collection of filters of chart data |
| **Sort** | Gets or sets the array of strings that describes rules of sorting |

### 4. Position

| Property name | Description |
|---|---|
| **Left** | Gets or sets the distance, between the left edge of the component and the left edge of its container's client area |
| **Top** | Gets or sets top position of the component |
| **Width** | Gets or sets width of the component |
| **Height** | Gets or sets height of the component |
| **Min Size** | Gets or sets minimal size |
| **Max Size** | Gets or sets maximal size |

### 5. Appearance

| Property name | Description |
|---|---|
| **Brush** | Gets or sets a brush to fill a component |
| **Border** | Gets or sets frame of the component |
| **Conditions** | Gets or sets a component condition |
| **Use Parent Styles** | Gets or sets a value which indicates that this component must use styles from parent component |

### 6. Behavior

| Property name | Description |
|---|---|
| **Grow to Height** | Gets or sets value which indicates that the height of this component |

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| | |
|---|---|
| | increases/decreases to the bottom of a container |
| **Dock Style** | Gets or sets a type of the component docking |
| **Enabled** | Gets or sets a value which indicates will this component be available |
| **Interaction** | |
| **Printable** | Gets or sets value which indicates whether a component is printable |
| **Print on** | Gets or sets value which indicates on which pages component will be printed |
| **Shift Mode** | Gets or sets value which indicates the shift mode of a component |

**7. Design**

| Property name | Description |
|---|---|
| **Name** | Gets or sets a component name |
| **Alias** | Gets or sets a text that will be shown instead of a component name. If the text is not indicated then the name is shown |
| **Restrictions** | Gets or sets value which indicates the restrictions of a component |
| **Locked** | Gets or sets a value which indicates that moving is locked |
| **Linked** | Gets or sets value, indicates that the object snap to the container is turned on |

## Axis Area Properties

| Property name | Description |
|---|---|
| **Brush** | Gets or sets a brush to fill area |
| **Border Color** | Gets or sets border color of area |
| **Color Each** | Gets or sets value which indicates that each series is drawn by its own color |
| **Grid Lines Horizontal** | Gets or sets horizontal grid lines on left axis |
| **Grid Lines Horizontal Right** | Gets or sets horizontal grid lines on right axis |
| **Grid Lines Vertical** | Gets or sets grid lines on vertical axis |
| **Interlacing Horizontal** | Gets or sets interlacing settings on horizontal axis |
| **Interlacing Vertical** | Gets or sets interlacing settings on vertical axis |
| **Reverse Horizontal** | Gets or sets value which indicate that all values on horizontal axis is reverse |

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| | |
|---|---|
| **Reverse Vertical** | Gets or sets value which indicate that all values on vertical axis is reverse |
| **Show Shadow** | Gets or sets value which indicates whether it is necessary to draw shadow |
| **X Axis** | Gets or sets settings of XAxis |
| **X Top Axis** | Gets or sets settings of XTopAxis |
| **Y Axis** | Gets or sets settings of YAxis |
| **Y Right Axis** | Gets or sets settings of YRightAxis |

## Pie Area Properties

| Property name | Description |
|---|---|
| **Brush** | Gets or sets a brush to fill area |
| **Border Color** | Gets or sets border color of area |
| **Show Shadow** | Gets or sets value which indicates whether it is necessary to draw shadow |

## Doughnut Area Properties

| Property name | Description |
|---|---|
| **Brush** | Gets or sets a brush to fill area |
| **Border Color** | Gets or sets border color of area |
| **Color Each** | Gets or sets value which indicates that each series is drawn by its own color |
| **Show Shadow** | Gets or sets value which indicates whether it is necessary to draw shadow |

## Legend Properties

| Property name | Description |
|---|---|
| **Brush** | Gets or sets a brush to fill a legend |
| **Direction** | Gets or sets direction of a legend |
| **Horizontal Alignment** | Gets or sets the text horizontal alignment of a legend |
| **Vertical Alignment** | Gets or sets the vertical alignment of a legend |

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| | |
|---|---|
| **Marker Alignment** | Gets or sets the marker alignment |
| **Border Color** | Gets or sets a border color of a legend |
| **Columns** | Gets or sets a columns count of a legend |
| **Font** | Gets or sets a font of a legend |
| **Horizontal Spacing** | Gets or sets horizontal spacing from a legend border |
| **Labels Color** | Gets or sets a color of a legend text |
| **Marker Size** | Gets or sets marker size |
| **Marker Visible** | Gets or sets visibility of marker |
| **Show Shadow** | Gets or sets value which indicates whether it is necessary to draw shadow |
| **Size** | Gets or sets legend size |
| **Title** | Gets or sets legend title |
| **Title Color** | Gets or sets legend color |
| **Title Font** | Gets or sets legend font |
| **Vertical Spacing** | Gets or sets vertical spacing from a legend border |
| **Visible** | Gets or sets whether a legend should be visible |

## Title Properties

| Property name | Description |
|---|---|
| **Alignment** | Gets or sets horizontal alignment of a title |
| **Antialiasing** | Gets or sets antialiasing of a title text |
| **Brush** | Gets or sets a brush to fill a title |
| **Dock** | Gets or sets a side to which a title will be docked |
| **Font** | Gets or sets a font of a title |
| **Spacing** | Gets or sets spacing from a title |
| **Text** | Gets or sets a title text |
| **Visible** | Gets or sets whether a title should be visible |

## Series Labels Properties

| Property Name | Description |
|---|---|
| **Brush** | Gets or sets a brush to fill a series labels |
| **Font** | Gets or sets a font of an series labels |

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| | |
|---|---|
| **Marker Alignment** | Gets or sets marker alignment |
| **Angle** | Gets or sets angle of a text rotation |
| **Antialiasing** | Gets or sets antialiasing of text titles |
| **Border Color** | Gets or sets a border color of an series labels |
| **Draw Border** | Gets or sets a value that indicates whether the border for Series Labels is drawn |
| **Format** | Gets or sets a text format |
| **Label Color** | Gets or sets label color |
| **Legend Value Type** | Gets or sets legend type value |
| **Marker Size** | Gets or sets marker size |
| **Marker Visible** | Gets or sets a value that indicates whether a marker is visible |
| **Prevent Intersection** | Gets or sets a value that includes algorithm of preventing intersection with the X axis |
| **Show on Zero Values** | Gets or sets forcibly showing zero values |
| **Step** | Gets or sets a step of showing series labels |
| **Text After** | Gets or sets a text that is shown after series |
| **Text Before** | Gets or sets a text that is shown before series |
| **Use Series Color** | Gets or sets a value that indicates whether colors are set for series are used |
| **Value Type** | Gets or sets a type of parameter that will be used in a series label |
| **Visible** | Gets or sets a value that indicates visibility of series labels |

## Series Labels (None) Properties

| Property Name | Description |
|---|---|
| **Marker Alignment** | Gets or sets marker alignment |
| **Angle** | Gets or sets angle of a text rotation |
| **Draw Border** | Gets or sets a value that indicates whether border for series labels should be drawn |
| **Format** | Gets or sets text formatting |
| **Legend Value Type** | Gets or sets legend value type |
| **Marker Size** | Gets or sets marker size |
| **Marker Visible** | Gets or sets whether a marker should be visible |
| **Show on Zero Values** | Gets or sets force showing zero values |
| **Step** | Gets or sets a step of showing series labels |
| **Text After** | Gets or sets a text that is shown after series |

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| | |
|---|---|
| **Text Before** | Gets or sets a text that is shown before series |
| **Use Series Color** | Gets or sets a value that indicates whether colors are set for series are used |
| **Value Type** | Gets or sets a type of parameter that will be used in a series label |

## Series Labels (Outside) Properties

| Property Name | Description |
|---|---|
| **Brush** | Gets or sets a brush to fill a series labels |
| **Font** | Gets or sets a font of an series labels |
| **Marker Alignment** | Gets or sets marker alignment |
| **Angle** | Gets or sets angle of a text rotation |
| **Antialiasing** | Gets or sets antialiasing of Series Labels |
| **Border Color** | Gets or sets a border color of series labels |
| **Draw Border** | Gets or sets a value that indicates whether border for series labels should be drawn |
| **Format** | Gets or sets text formatting |
| **Label Color** | Gets or sets label color |
| **Legend Value Type** | Gets or sets legend value type |
| **Line Length** | Gets or sets length of a connecting line of a series label |
| **Marker Size** | Gets or sets marker size |
| **Marker Visible** | Gets or sets whether a marker should be visible |
| **Show on Zero Values** | Gets or sets force showing zero values |
| **Step** | Gets or sets a step of showing series labels |
| **Text After** | Gets or sets a text that is shown after series |
| **Text Before** | Gets or sets a text that is shown before series |
| **Use Series Color** | Gets or sets a value that indicates whether colors are set for series are used |
| **Value Type** | Gets or sets a type of parameter that will be used in a series label |
| **Visible** | Gets or sets a value that indicates visibility of series labels |

## Axis Properties

| Property Name | Description |
|---|---|

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| | |
|---|---|
| **Arrow Style** | Gets or sets arrow style |
| **Labels** | Gets or sets labels |
| **Line Color** | Gets or sets line color |
| **Line Style** | Gets or sets line style |
| **Line Width** | Gets or sets line width |
| **Range** | Gets or sets range |
| **Show Edge Values** | Gets or sets show edge values |
| **Start From Zero** | Gets or sets a value that indicates how a chart should be shown on the chart area |
| **Step** | Gets or sets step |
| **Ticks** | Gets or sets ticks |
| **Title** | Gets or sets a title |
| **Visible** | Gets or sets a value that indicates visibility of axis |

## Grid Lines Properties

| Property Name | Description |
|---|---|
| **Color** | Gets or sets color |
| **Minor Color** | Gets or sets minor ticks color |
| **Minor Count** | Gets or sets minor ticks count |
| **Minor Style** | Gets or sets minor ticks style |
| **Minor Visible** | Gets or sets minor ticks visibility |
| **Style** | Gets or sets style |
| **Visible** | Gets or sets visibility |

## Interlacing Properties

| Property Name | Description |
|---|---|
| **Interlaced Brush** | Gets or sets Interlaced Brush |
| **Visible** | Gets or sets visibility |

## Clustered Column, Clustered Bar, Stacked Column, Full-Stacked Column, Stacked Bar Series Properties

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**1. Data**

| Property Name | Description |
|---|---|
| **Conditions** | Gets or sets a collection of conditions |
| **Filters** | Gets or sets a collection of filters |
| **Format** | Gets or sets a data format in what series labels will be shown |
| **Sort by** | Gets or sets section of sorting data by values, arguments, of without sorting |
| **Sort Direction** | Gets or sets sort direction |
| **Auto Series Key Data Column** | Gets or sets a data column name with the key-value that is used to create series automatically |
| **Auto Series Color Data Column** | Gets or sets a data column name that defines color of automatically created series. The color should be represented as a string |
| **Auto Series Title Data Column** | Gets or sets a data column name that defines a title of automatically created series |

**2. Appearance**

| Property Name | Description |
|---|---|
| **Border Color** | Gets or sets a border color |
| **Brush** | Gets or sets a series brush |
| **Show Shadow** | Gets or sets a shadow |

**3. Behavior**

| Property Name | Description |
|---|---|
| **Show Zeros** | Gets or sets a value that visualizes zero values of series |
| **Width** | Gets or sets a series column width |
| **Y Axis** | Gets or sets axis to what a series is assigned |
| **Series Labels** | Gets or sets series labels for this series |
| **Show in Legend** | Gets or sets value that allows showing series label in a legend |
| **Show Series Labels** | Gets or sets which type of series labels will be used: from chart settings or from settings from the series |
| **Title** | Gets or sets a series title |

**4. Argument**

| Property Name | Description |
|---|---|
| **Argument Data Column** | Gets or sets a data column name that indicates a value of an argument |
| **Argument** | Gets or sets an expression of an argument. For example: {Order. |

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| | |
|---|---|
| | Argument} |
| **List of Arguments** | Gets or sets an expression that indicates a list of arguments. For example: 1;2;3 |

**5. Value**

| Property Name | Description |
|---|---|
| **Value Data Column** | Gets or sets a data column name that indicates a value of data |
| **Value** | Gets or sets an expression of a value. For example: {Order.Value} |
| **List of Values** | Gets or sets an expression that indicates a list of values. For example: 1;2;3 |

## Line, Scatter Line Series Properties

**1. Data**

| Property Name | Description |
|---|---|
| **Filters** | Gets or sets a collection of filters |
| **Format** | Gets or sets a data format in what series labels will be shown |
| **Sort by** | Gets or sets a selection of data sorting by values, arguments, or without sorting |
| **Sort Direction** | Gets or sets a direction of sorting |
| **Auto Series Key Data Column** | Gets or sets data column name with the key-value that is used to create series automatically |
| **Auto Series Color Data Column** | Gets or sets a data column name that defines color of automatically created series. The color should be represented as a string |
| **Auto Series Title Data Column** | Gets or sets a data column name that defines a title of automatically created series |

**2. Appearance**

| Property Name | Description |
|---|---|
| **Labels Offset** | Gets or sets vertical offset of labels in relation to its first position |
| **Lighting** | Gets or sets sets line lighting |
| **Line Color** | Gets or sets line color |
| **Line Style** | Gets or sets line style |
| **Line Width** | Gets or sets line width |
| **Marker Color** | Gets or sets marker color |
| **Marker Size** | Gets or sets marker size |
| **Marker Type** | Gets or sets marker type |

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| | |
|---|---|
| **Show Shadow** | Gets or sets series shadow |

**3. Behavior**

| Property Name | Description |
|---|---|
| **Show Marker** | Gets or sets marker showing |
| **Y Axis** | Gets or sets axis to what a series is assigned |
| **Series Labels** | Gets or sets series labels for this series |
| **Show in Legend** | Gets or sets value that allows showing series label in a legend |
| **Show Series Labels** | Gets or sets which type of series labels will be used: from chart settings or from settings from the series |
| **Title** | Gets or sets series title |

**4. Argument**

| Property Name | Description |
|---|---|
| **Argument Data Column** | Gets or sets a data column name that indicates a value of an argument |
| **Argument** | Gets or sets an expression of an argument. For example: {Order. Argument} |
| **List of Arguments** | Gets or sets an expression that indicates a list of arguments. For example: 1;2;3 |

**5. Value**

| Property Name | Description |
|---|---|
| **Value Data Column** | Gets or sets a data column name that indicates a value of data |
| **Value** | Gets or sets an expression of a value. For example: {Order.Value} |
| **List of Values** | Gets or sets an expression that indicates a list of values. For example: 1;2;3 |

## Stepped Line Series Properties

**1. Data**

| Property Name | Description |
|---|---|
| **Filters** | Gets or sets a collection of filters |
| **Format** | Gets or sets a data format in what series labels will be shown |
| **Sort by** | Gets or sets a selection of data sorting by values, arguments, or without sorting |
| **Sort Direction** | Gets or sets direction of sorting |
| **Auto Series Key Data** | Gets or sets data column name with the key-value that is used to |

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| | |
|---|---|
| **Column** | create series automatically |
| **Auto Series Color Data Column** | Gets or sets a data column name that defines color of automatically created series. The color should be represented as a string |
| **Auto Series Title Data Column** | Gets or sets a data column name that defines a title of automatically created series |

**2. Appearance**

| Property Name | Description |
|---|---|
| **Labels Offset** | Gets or sets vertical offset of labels in relation to its first position |
| **Lighting** | Gets or sets sets line lighting |
| **Line Color** | Gets or sets line color |
| **Line Style** | Gets or sets line style |
| **Line Width** | Gets or sets line width |
| **Marker Color** | Gets or sets marker color |
| **Marker Size** | Gets or sets marker size |
| **Marker Type** | Gets or sets marker type |
| **Show Shadow** | Gets or sets whether a shadow must be shown |

**3. Behavior**

| Property Name | Description |
|---|---|
| **Point at Center** | Gets or sets showing a value by the center of a line |
| **Show Marker** | Gets or sets marker showing |
| **Y Axis** | Gets or sets axis to what a series is assigned |
| **Series Labels** | Gets or sets series labels for this series |
| **Show in Legend** | Gets or sets value that allows showing series label in a legend |
| **Show Series Labels** | Gets or sets which type of series labels will be used: from chart settings or from settings from the series |
| **Title** | Gets or sets a series title |

**4. Argument**

| Property Name | Description |
|---|---|
| **Argument Data Column** | Gets or sets a data column name that indicates a value of an argument |
| **Argument** | Gets or sets an expression of an argument. For example: {Order.Argument} |
| **List of Arguments** | Gets or sets an expression that indicates a list of arguments. For example: 1;2;3 |

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**5. Value**

| Property Name | Description |
|---|---|
| **Value Data Column** | Gets or sets a data column name that indicates a value of data |
| **Value** | Gets or sets an expression of a value. For example: {Order.Value} |
| **List of Values** | Gets or sets an expression that indicates a list of values. For example: 1;2;3 |

## Spline, Scatter Spline Series Properties

**1. Data**

| Property Name | Description |
|---|---|
| **Filters** | Gets or sets a collection of filters |
| **Format** | Gets or sets a data format in what series labels will be shown |
| **Sort by** | Gets or sets a selection of data sorting by values, arguments, or without sorting |
| **Sort Direction** | Gets or sets direction of sorting |
| **Auto Series Key Data Column** | Gets or sets data column name with the key-value that is used to create series automatically |
| **Auto Series Color Data Column** | Gets or sets a data column name that defines color of automatically created series. The color should be represented as a string |
| **Auto Series Title Data Column** | Gets or sets a data column name that defines a title of automatically created series |

**2. Appearance**

| Property Name | Description |
|---|---|
| **Labels Offset** | Gets or sets vertical offset of labels in relation to its first position |
| **Lighting** | Gets or sets sets line lighting |
| **Line Color** | Gets or sets line color |
| **Line Style** | Gets or sets line style |
| **Line Width** | Gets or sets line width |
| **Marker Color** | Gets or sets marker color |
| **Marker Size** | Gets or sets marker size |
| **Marker Type** | Gets or setsmarker type |
| **Show Shadow** | Gets or sets whether a shadow must be shown |

**3. Behavior**

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| Property Name | Description |
|---|---|
| **Show Marker** | Gets or sets marker showing |
| **Tension** | Gets or sets tension of a line |
| **Y Axis** | Gets or sets axis to what a series is assigned |
| **Series Labels** | Gets or sets series labels for this series |
| **Show in Legend** | Gets or sets value that allows showing series label in a legend |
| **Show Series Labels** | Gets or sets which type of series labels will be used: from chart settings or from settings from the series |
| **Title** | Gets or sets a series title |

**4. Argument**

| Property Name | Description |
|---|---|
| **Argument Data Column** | Gets or sets a data column name that indicates a value of an argument |
| **Argument** | Gets or sets an expression of an argument. For example: {Order. Argument} |
| **List of Arguments** | Gets or sets an expression that indicates a list of arguments. For example: 1;2;3 |

**5. Value**

| Property Name | Description |
|---|---|
| **Value Data Column** | Gets or sets a data column name that indicates a value of data |
| **Value** | Gets or sets an expression of a value. For example: {Order.Value} |
| **List of Values** | Gets or sets an expression that indicates a list of values. For example: 1;2;3 |

## Area Series Properties

**1. Data**

| Property Name | Description |
|---|---|
| **Filters** | Gets or sets a collection of filters |
| **Format** | Gets or sets a data format in what series labels will be shown |
| **Sort by** | Gets or sets a selection of data sorting by values, arguments, or without sorting |
| **Sort Direction** | Gets or sets direction of sorting |
| **Auto Series Key Data Column** | Gets or sets data column name with the key-value that is used to create series automatically |
| **Auto Series Color Data** | Gets or sets a data column name that defines color of |

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| | |
|---|---|
| **Column** | automatically created series. The color should be represented as a string |
| **Auto Series Title Data Column** | Gets or sets a data column name that defines a title of automatically created series |

**2. Appearance**

| Property Name | Description |
|---|---|
| **Brush** | Gets or sets a brush |
| **Labels Offset** | Gets or sets vertical offset of labels in relation to its first position |
| **Lighting** | Gets or sets sets line lighting |
| **Line Color** | Gets or sets line color |
| **Line Style** | Gets or sets line style |
| **Line Width** | Gets or sets line width |
| **Marker Color** | Gets or sets marker color |
| **Marker Size** | Gets or sets marker size |
| **Marker Type** | Gets or sets marker type |
| **Show Shadow** | Gets or sets whether a shadow must be shown |

**3. Behavior**

| Property Name | Description |
|---|---|
| **Show Marker** | Gets or sets marker showing |
| **Y Axis** | Gets or sets axis to what a series is assigned |
| **Series Labels** | Gets or sets series labels for this series |
| **Show in Legend** | Gets or sets value that allows showing series label in a legend |
| **Show Series Labels** | Gets or sets which type of series labels will be used: from chart settings or from settings from the series |
| **Title** | Gets or sets a series title |

**4. Argument**

| Property Name | Description |
|---|---|
| **Argument Data Column** | Gets or sets a data column name that indicates a value of an argument |
| **Argument** | Gets or sets an expression of an argument. For example: {Order. Argument} |
| **List of Arguments** | Gets or sets an expression that indicates a list of arguments. For example: 1;2;3 |

**5. Value**

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| Property Name | Description |
|---|---|
| **Value Data Column** | Gets or sets a data column name that indicates a value of data |
| **Value** | Gets or sets an expression of a value. For example: {Order.Value} |
| **List of Values** | Gets or sets an expression that indicates a list of values. For example: 1;2;3 |

## Stepped Area Series Properties

**1. Data**

| Property Name | Description |
|---|---|
| **Filters** | Gets or sets a collection of filters |
| **Format** | Gets or sets a data format in what series labels will be shown |
| **Sort by** | Gets or sets a selection of data sorting by values, arguments, or without sorting |
| **Sort Direction** | Gets or sets direction of sorting |
| **Auto Series Key Data Column** | Gets or sets data column name with the key-value that is used to create series automatically |
| **Auto Series Color Data Column** | Gets or sets a data column name that defines color of automatically created series. The color should be represented as a string |
| **Auto Series Title Data Column** | Gets or sets a data column name that defines a title of automatically created series |

**2. Appearance**

| Property Name | Description |
|---|---|
| **Brush** | Gets or sets a brush |
| **Labels Offset** | Gets or sets vertical offset of labels in relation to its first position |
| **Lighting** | Gets or sets sets line lighting |
| **Line Color** | Gets or sets line color |
| **Line Style** | Gets or sets line style |
| **Line Width** | Gets or sets line width |
| **Marker Color** | Gets or sets marker color |
| **Marker Size** | Gets or sets marker size |
| **Marker Type** | Gets or sets marker type |
| **Show Shadow** | Gets or sets whether a shadow must be shown |

**3. Behavior**

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| Property Name | Description |
|---|---|
| **Point at Center** | Gets or sets showing a value by the center of a line |
| **Show Marker** | Gets or sets marker showing |
| **Y Axis** | Gets or sets axis to what a series is assigned |
| **Series Labels** | Gets or sets series labels for this series |
| **Show in Legend** | Gets or sets value that allows showing series label in a legend |
| **Show Series Labels** | Gets or sets which type of series labels will be used: from chart settings or from settings from the series |
| **Title** | Gets or sets a series title |

**4. Argument**

| Property Name | Description |
|---|---|
| **Argument Data Column** | Gets or sets a data column name that indicates a value of an argument |
| **Argument** | Gets or sets an expression of an argument. For example: {Order. Argument} |
| **List of Arguments** | Gets or sets an expression that indicates a list of arguments. For example: 1;2;3 |

**5. Value**

| Property Name | Description |
|---|---|
| **Value Data Column** | Gets or sets a data column name that indicates a value of data |
| **Value** | Gets or sets an expression of a value. For example: {Order.Value} |
| **List of Values** | Gets or sets an expression that indicates a list of values. For example: 1;2;3 |

## Spline Area Series Properties

**1. Data**

| Property Name | Description |
|---|---|
| **Filters** | Gets or sets a collection of filters |
| **Format** | Gets or sets a data format in what series labels will be shown |
| **Sort by** | Gets or sets a selection of data sorting by values, arguments, or without sorting |
| **Sort Direction** | Gets or sets direction of sorting |
| **Auto Series Key Data Column** | Gets or sets data column name with the key-value that is used to create series automatically |
| **Auto Series Color Data** | Gets or sets a data column name that defines color of |

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| | |
|---|---|
| **Column** | automatically created series. The color should be represented as a string |
| **Auto Series Title Data Column** | Gets or sets a data column name that defines a title of automatically created series |

**2. Appearance**

| Property Name | Description |
|---|---|
| **Brush** | Gets or sets a brush |
| **Labels Offset** | Gets or sets vertical offset of labels in relation to its first position |
| **Lighting** | Gets or sets sets line lighting |
| **Line Color** | Gets or sets line color |
| **Line Style** | Gets or sets line style |
| **Line Width** | Gets or sets line width |
| **Marker Color** | Gets or sets marker color |
| **Marker Size** | Gets or sets marker size |
| **Marker Type** | Gets or sets marker type |
| **Show Shadow** | Gets or sets whether a shadow must be shown |

**3. Behavior**

| Property Name | Description |
|---|---|
| **Show Marker** | Gets or sets marker showing |
| **Tension** | Gets or sets tension of a line |
| **Y Axis** | Gets or sets axis to what a series is assigned |
| **Series Labels** | Gets or sets series labels for this series |
| **Show in Legend** | Gets or sets value that allows showing series label in a legend |
| **Show Series Labels** | Gets or sets which type of series labels will be used: from chart settings or from settings from the series |
| **Title** | Gets or sets a series title |

**4. Argument**

| Property Name | Description |
|---|---|
| **Argument Data Column** | Gets or sets a data column name that indicates a value of an argument |
| **Argument** | Gets or sets an expression of an argument. For example: {Order. Argument} |
| **List of Arguments** | Gets or sets an expression that indicates a list of arguments. For example: 1;2;3 |

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**5. Value**

| Property Name | Description |
|---|---|
| **Value Data Column** | Gets or sets a data column name that indicates a value of data |
| **Value** | Gets or sets an expression of a value. For example: {Order.Value} |
| **List of Values** | Gets or sets an expression that indicates a list of values. For example: 1;2;3 |

## Stacked Line, Full-Stacked Line Series Properties

**1. Data**

| Property Name | Description |
|---|---|
| **Filters** | Gets or sets a collection of filters |
| **Format** | Gets or sets a data format in what series labels will be shown |
| **Sort by** | Gets or sets a selection of data sorting by values, arguments, or without sorting |
| **Sort Direction** | Gets or sets direction of sorting |
| **Auto Series Key Data Column** | Gets or sets data column name with the key-value that is used to create series automatically |
| **Auto Series Color Data Column** | Gets or sets a data column name that defines color of automatically created series. The color should be represented as a string |
| **Auto Series Title Data Column** | Gets or sets a data column name that defines a title of automatically created series |

**2. Appearance**

| Property Name | Description |
|---|---|
| **Lighting** | Gets or sets sets line lighting |
| **Line Color** | Gets or sets line color |
| **Line Style** | Gets or sets line style |
| **Line Width** | Gets or sets line width |
| **Marker Color** | Gets or sets marker color |
| **Marker Size** | Gets or sets marker size |
| **Marker Type** | Gets or sets marker type |
| **Show Shadow** | Gets or sets whether a shadow must be shown |

**3. Behavior**

| Property Name | Description |
|---|---|

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| | |
|---|---|
| **Show Marker** | Gets or sets marker showing |
| **Y Axis** | Gets or sets axis to what a series is assigned |
| **Series Labels** | Gets or sets series labels for this series |
| **Show in Legend** | Gets or sets value that allows showing series label in a legend |
| **Show Series Labels** | Gets or sets which type of series labels will be used: from chart settings or from settings from the series |
| **Title** | Gets or sets a series title |

**4. Argument**

| Property Name | Description |
|---|---|
| **Argument Data Column** | Gets or sets a data column name that indicates a value of an argument |
| **Argument** | Gets or sets an expression of an argument. For example: {Order. Argument} |
| **List of Arguments** | Gets or sets an expression that indicates a list of arguments. For example: 1;2;3 |

**5. Value**

| Property Name | Description |
|---|---|
| **Value Data Column** | Gets or sets a data column name that indicates a value of data |
| **Value** | Gets or sets an expression of a value. For example: {Order.Value} |
| **List of Values** | Gets or sets an expression that indicates a list of values. For example: 1;2;3 |

## Stacked Spline, Full-Stacked Spline Series Properties

**1. Data**

| Property Name | Description |
|---|---|
| **Filters** | Gets or sets a collection of filters |
| **Format** | Gets or sets a data format in what series labels will be shown |
| **Sort by** | Gets or sets a selection of data sorting by values, arguments, or without sorting |
| **Sort Direction** | Gets or sets direction of sorting |
| **Auto Series Key Data Column** | Gets or sets data column name with the key-value that is used to create series automatically |
| **Auto Series Color Data Column** | Gets or sets a data column name that defines color of automatically created series. The color should be represented as a string |

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| | |
|---|---|
| **Auto Series Title Data Column** | Gets or sets a data column name that defines a title of automatically created series |

**2. Appearance**

| Property Name | Description |
|---|---|
| **Lighting** | Gets or sets sets line lighting |
| **Line Color** | Gets or sets line color |
| **Line Style** | Gets or sets line style |
| **Line Width** | Gets or sets line width |
| **Marker Color** | Gets or sets marker color |
| **Marker Size** | Gets or sets marker size |
| **Marker Type** | Gets or sets marker type |
| **Show Shadow** | Gets or sets whether a shadow must be shown |

**3. Behavior**

| Property Name | Description |
|---|---|
| **Show Marker** | Gets or sets marker showing |
| **Tension** | Gets or sets tension of a line |
| **Y Axis** | Gets or sets axis to what a series is assigned |
| **Series Labels** | Gets or sets series labels for this series |
| **Show in Legend** | Gets or sets value that allows showing series label in a legend |
| **Show Series Labels** | Gets or sets which type of series labels will be used: from chart settings or from settings from the series |
| **Title** | Gets or sets a series title |

**4. Argument**

| Property Name | Description |
|---|---|
| **Argument Data Column** | Gets or sets a data column name that indicates a value of an argument |
| **Argument** | Gets or sets an expression of an argument. For example: {Order. Argument} |
| **List of Arguments** | Gets or sets an expression that indicates a list of arguments. For example: 1;2;3 |

**5. Value**

| Property Name | Description |
|---|---|
| **Value Data Column** | Gets or sets a data column name that indicates a value of data |
| **Value** | Gets or sets an expression of a value. For example: {Order.Value} |

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| | |
|---|---|
| **List of Values** | Gets or sets an expression that indicates a list of values. For example: 1;2;3 |

## Stacked Area, Full-Stacked Area Series Properties

**1. Data**

| Property Name | Description |
|---|---|
| **Filters** | Gets or sets a collection of filters |
| **Format** | Gets or sets a data format in what series labels will be shown |
| **Sort by** | Gets or sets a selection of data sorting by values, arguments, or without sorting |
| **Sort Direction** | Gets or sets direction of sorting |
| **Auto Series Key Data Column** | Gets or sets data column name with the key-value that is used to create series automatically |
| **Auto Series Color Data Column** | Gets or sets a data column name that defines color of automatically created series. The color should be represented as a string |
| **Auto Series Title Data Column** | Gets or sets a data column name that defines a title of automatically created series |

**2. Appearance**

| Property Name | Description |
|---|---|
| **Brush** | Gets or sets a brush |
| **Lighting** | Gets or sets sets line lighting |
| **Line Color** | Gets or sets line color |
| **Line Style** | Gets or sets line style |
| **Line Width** | Gets or sets line width |
| **Marker Color** | Gets or sets marker color |
| **Marker Size** | Gets or sets marker size |
| **Marker Type** | Gets or sets marker type |
| **Show Shadow** | Gets or sets whether a shadow must be shown |

**3. Behavior**

| Property Name | Description |
|---|---|
| **Show Marker** | Gets or sets marker showing |
| **Y Axis** | Gets or sets axis to what a series is assigned |
| **Series Labels** | Gets or sets series labels for this series |

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| | |
|---|---|
| **Show in Legend** | Gets or sets value that allows showing series label in a legend |
| **Show Series Labels** | Gets or sets which type of series labels will be used: from chart settings or from settings from the series |
| **Title** | Gets or sets a series title |

**4. Argument**

| Property Name | Description |
|---|---|
| **Argument Data Column** | Gets or sets a data column name that indicates a value of an argument |
| **Argument** | Gets or sets an expression of an argument. For example: {Order. Argument} |
| **List of Arguments** | Gets or sets an expression that indicates a list of arguments. For example: 1;2;3 |

**5. Value**

| Property Name | Description |
|---|---|
| **Value Data Column** | Gets or sets a data column name that indicates a value of data |
| **Value** | Gets or sets an expression of a value. For example: {Order.Value} |
| **List of Values** | Gets or sets an expression that indicates a list of values. For example: 1;2;3 |

## Stacked Spline Area, Full-Stacked Spline Area Series Properties

**1. Data**

| Property Name | Description |
|---|---|
| **Filters** | Gets or sets a collection of filters |
| **Format** | Gets or sets a data format in what series labels will be shown |
| **Sort by** | Gets or sets a selection of data sorting by values, arguments, or without sorting |
| **Sort Direction** | Gets or sets direction of sorting |
| **Auto Series Key Data Column** | Gets or sets data column name with the key-value that is used to create series automatically |
| **Auto Series Color Data Column** | Gets or sets a data column name that defines color of automatically created series. The color should be represented as a string |
| **Auto Series Title Data Column** | Gets or sets a data column name that defines a title of automatically created series |

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**2. Appearance**

| Property Name | Description |
|---|---|
| **Brush** | Gets or sets a brush |
| **Lighting** | Gets or sets sets line lighting |
| **Line Color** | Gets or sets line color |
| **Line Style** | Gets or sets line style |
| **Line Width** | Gets or sets line width |
| **Marker Color** | Gets or set smarker color |
| **Marker Size** | Gets or sets marker size |
| **Marker Type** | Gets or sets marker type |
| **Show Shadow** | Gets or sets whether a shadow must be shown |

**3. Behavior**

| Property Name | Description |
|---|---|
| **Show Marker** | Gets or sets marker showing |
| **Tension** | Gets or sets tension of a line |
| **Y Axis** | Gets or sets axis to what a series is assigned |
| **Series Labels** | Gets or sets series labels for this series |
| **Show in Legend** | Gets or sets value that allows showing series label in a legend |
| **Show Series Labels** | Gets or sets which type of series labels will be used: from chart settings or from settings from the series |
| **Title** | Gets or sets a series title |

**4. Argument**

| Property Name | Description |
|---|---|
| **Argument Data Column** | Gets or sets a data column name that indicates a value of an argument |
| **Argument** | Gets or sets an expression of an argument. For example: {Order. Argument} |
| **List of Arguments** | Gets or sets an expression that indicates a list of arguments. For example: 1;2;3 |

**5. Value**

| Property Name | Description |
|---|---|
| **Value Data Column** | Gets or sets a data column name that indicates a value of data |
| **Value** | Gets or sets an expression of a value. For example: {Order.Value} |
| **List of Values** | Gets or sets an expression that indicates a list of values. For example: 1;2;3 |

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# Pie, Doughnut Series Properties

### 1. Data

| Property Name | Description |
|---|---|
| **Conditions** | Gets or sets a collection of conditions |
| **Filters** | Gets or sets a collection of filters |
| **Format** | Gets or sets a data format in what series labels will be shown |
| **Sort by** | Gets or sets a selection of data sorting by values, arguments, or without sorting |
| **Sort Direction** | Gets or sets direction of sorting |
| **Auto Series Key Data Column** | Gets or sets data column name with the key-value that is used to create series automatically |
| **Auto Series Color Data Column** | Gets or sets a data column name that defines color of automatically created series. The color should be represented as a string |
| **Auto Series Title Data Column** | Gets or sets a data column name that defines a title of automatically created series |

### 2. Appearance

| Property Name | Description |
|---|---|
| **Border Color** | Gets or sets series border color |
| **Brush** | Gets or sets a brush |
| **Diameter** | Gets or sets static diameter of a chart. If the value is zero, then the diameter will be calculated automatically |
| **Lighting** | Gets or sets sets line lighting |
| **Show Shadow** | Gets or sets whether a shadow must be shown |

### 3. Behavior

| Property Name | Description |
|---|---|
| **Start Angle** | Gets or sets the start angle of chart drawing |
| **Y Axis** | Gets or sets axis to what a series is assigned |
| **Series Labels** | Gets or sets series labels for this series |
| **Show in Legend** | Gets or sets value that allows showing series label in a legend |
| **Show Series Labels** | Gets or sets which type of series labels will be used: from chart settings or from settings from the series |
| **Title** | Gets or sets a series title |
| **Distance** | Gets or sets a distance to pull out a chart slice |

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| | |
|---|---|
| **Cut Pie List** | Gets or sets a list of pulled out slices |

**4. Argument**

| Property Name | Description |
|---|---|
| **Argument Data Column** | Gets or sets a data column name that indicates a value of an argument |
| **Argument** | Gets or sets an expression of an argument. For example: {Order. Argument} |
| **List of Arguments** | Gets or sets an expression that indicates a list of arguments. For example: 1;2;3 |

**5. Value**

| Property Name | Description |
|---|---|
| **Value Data Column** | Gets or sets a data column name that indicates a value of data |
| **Value** | Gets or sets an expression of a value. For example: {Order.Value} |
| **List of Values** | Gets or sets an expression that indicates a list of values. For example: 1;2;3 |

## Gantt Series Properties

**1. Data**

| Property Name | Description |
|---|---|
| **Conditions** | Gets or sets a collection of conditions |
| **Filters** | Gets or sets a collection of filters |
| **Format** | Gets or sets a data format in what series labels will be shown |
| **Sort by** | Gets or sets a selection of data sorting by values, arguments, or without sorting |
| **Sort Direction** | Gets or sets direction of sorting |
| **Auto Series Key Data Column** | Gets or sets data column name with the key-value that is used to create series automatically |
| **Auto Series Color Data Column** | Gets or sets a data column name that defines color of automatically created series. The color should be represented as a string |
| **Auto Series Title Data Column** | Gets or sets a data column name that defines a title of automatically created series |

**2. Appearance**

| Property Name | Description |
|---|---|

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| | |
|---|---|
| **Border Color** | Gets or sets a border color |
| **Brush** | Gets or sets a brush |
| **Show Shadow** | Gets or sets whether a shadow must be shown |

**3. Behavior**

| Property Name | Description |
|---|---|
| **Show Zeros** | Gets or sets a value that visualizes zero values of series |
| **Width** | Gets or sets a series column width |
| **Y Axis** | Gets or sets axis to what a series is assigned |
| **Series Labels** | Gets or sets series labels for this series |
| **Show in Legend** | Gets or sets value that allows showing series label in a legend |
| **Show Series Labels** | Gets or sets which type of series labels will be used: from chart settings or from settings from the series |
| **Title** | Gets or sets a series title |

**4. Argument**

| Property Name | Description |
|---|---|
| **Argument Data Column** | Gets or sets a data column name that indicates a value of an argument |
| **Argument** | Gets or sets an expression of an argument. For example: {Order. Argument} |
| **List of Arguments** | Gets or sets an expression that indicates a list of arguments. For example: 1;2;3 |

**5. Value**

| Property Name | Description |
|---|---|
| **Value Data Column** | Gets or sets a data column name that indicates a value of data |
| **Value** | Gets or sets an expression of a value. For example: {Order.Value} |
| **List of Values** | Gets or sets an expression that indicates a list of values. For example: 1;2;3 |

**6. Value End**

| Property Name | Description |
|---|---|
| **Value Data Column End** | Gets or sets a data column name that indicates a value of data |
| **Value End** | Gets or sets a expression of the end value. For example: {Order. Value} |
| **List of Values End** | Gets or sets an expression that indicates a list of values. For example: 1;2;3 |

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# Scatter Series Properties

### 1. Data

| Property Name | Description |
|---|---|
| **Filters** | Gets or sets a collection of filters |
| **Format** | Gets or sets a data format in what series labels will be shown |
| **Sort by** | Gets or sets a selection of data sorting by values, arguments, or without sorting |
| **Sort Direction** | Gets or sets direction of sorting |
| **Auto Series Key Data Column** | Gets or sets data column name with the key-value that is used to create series automatically |
| **Auto Series Color Data Column** | Gets or sets a data column name that defines color of automatically created series. The color should be represented as a string |
| **Auto Series Title Data Column** | Gets or sets a data column name that defines a title of automatically created series |

### 2. Appearance

| Property Name | Description |
|---|---|
| **Labels Offset** | Gets or sets vertical offset of labels in relation to its first position |
| **Marker Color** | Gets or sets marker color |
| **Marker Size** | Gets or sets marker size |
| **Marker Type** | Gets or sets marker type |
| **Show Shadow** | Gets or sets whether a shadow must be shown |

### 3. Behavior

| Property Name | Description |
|---|---|
| **Show Marker** | Gets or sets marker showing |
| **Y Axis** | Gets or sets axis to what a series is assigned |
| **Series Labels** | Gets or sets series labels for this series |
| **Show in Legend** | Gets or sets value that allows showing series label in a legend |
| **Show Series Labels** | Gets or sets which type of series labels will be used: from chart settings or from settings from the series |
| **Title** | Gets or sets a series title |

### 4. Argument

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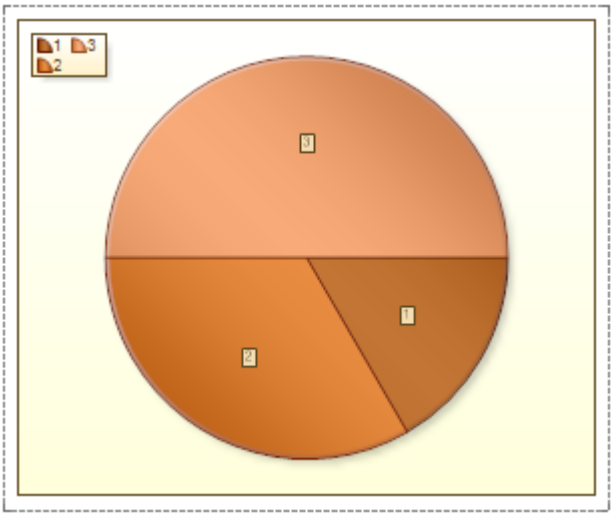
| Property Name | Description |
|---|---|
| **Argument Data Column** | Gets or sets a data column name that indicates a value of an argument |
| **Argument** | Gets or sets an expression of an argument. For example: {Order. Argument} |
| **List of Arguments** | Gets or sets an expression that indicates a list of arguments. For example: 1;2;3 |

**5. Value**

| Property Name | Description |
|---|---|
| **Value Data Column** | Gets or sets a data column name that indicates a value of data |
| **Value** | Gets or sets an expression of a value. For example: {Order.Value} |
| **List of Values** | Gets or sets an expression that indicates a list of values. For example: 1;2;3 |

## 2.26.2. Area

Circular area or area without axes is a space where charts can be placed without axes. A circular area includes the main elements of the chart: series, chart title and a legend. In the area without axes the following chart types may be placed: **Pie** and **Doughnut**. The difference between these types of charts is that, for Pie type of a chart, rows are arranged in series. And for the Doughnut chart - rings. The picture below shows an example of a Pie chart, with three series:




As can be seen from the picture, the series are arranged consecutively in a clockwise direction. In the Doughnut chart, the number of rows will match the number of rings. The picture below shows an example of a chart that has three rows:

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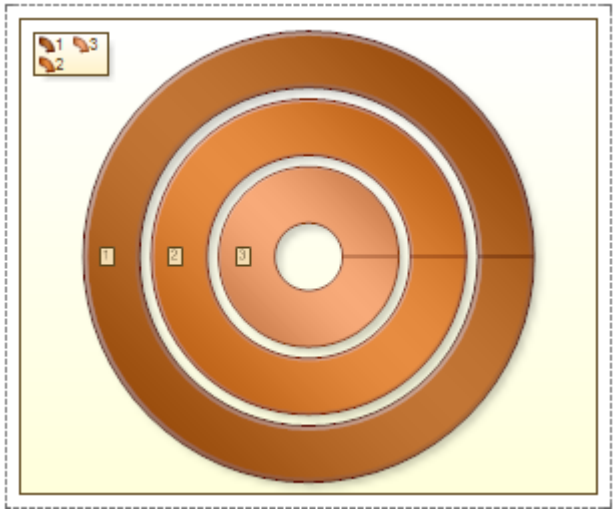
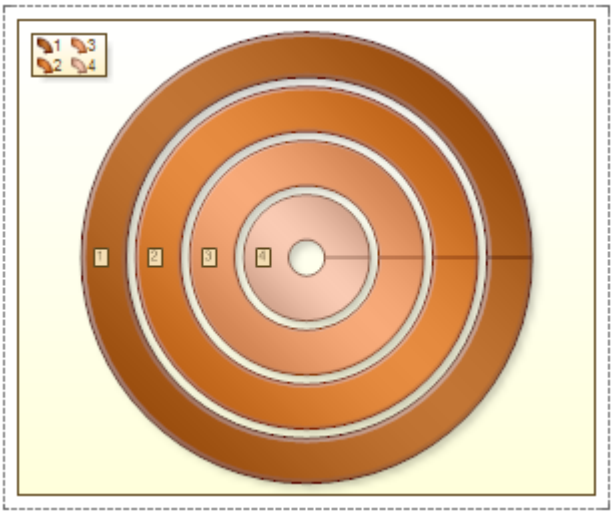


### 2.26.2.1. Doughnut

**Doughnut** chart is circular chart divided into sectors. It has a blank center and the ability to support multiple statistics as one. Doughnut illustrates proportion. On the picture below the doughnut chart sample is represented:



#### 2.26.2.1.1 Series Labels.

**Series Labels** can only be placed in the center on the doughnut chart. The **Series Labels** may have two values: **None** and **Center**. If the **Series Labels** property is set to **None**, then labels are not shown. The picture below shows the doughnut with no labels:

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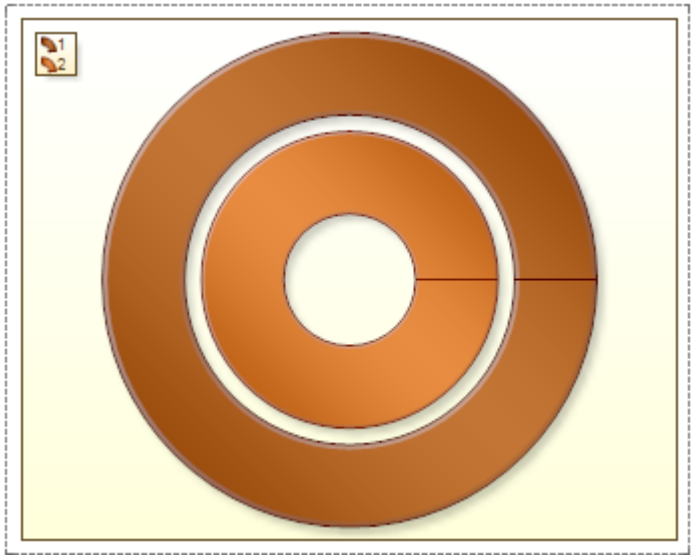
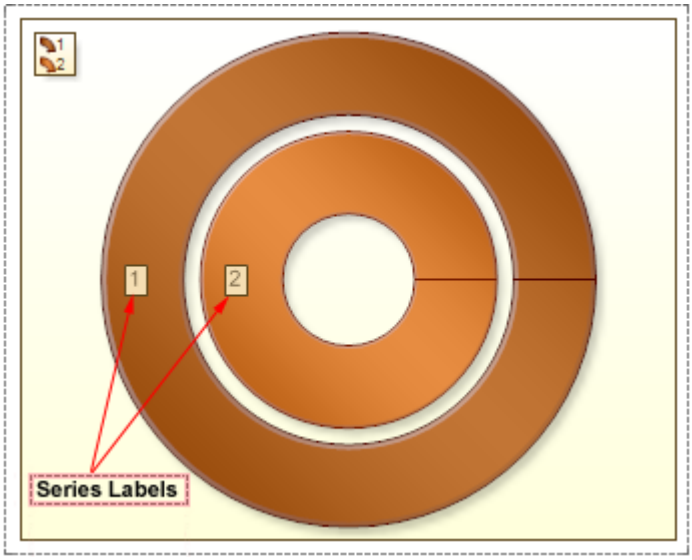


If the **Series Labels** property is set to **Center**, then labels are shown in the center of the chart ring. The picture below shows the doughnut with labels:




### 2.26.2.2. Pie

A **Pie** chart (or a circle graph) is circular chart divided into sectors, illustrating proportion. Each Series is a part of chart. In a pie chart, each sector, is proportional to the quantity it represents. Together, the sectors create a full disk.

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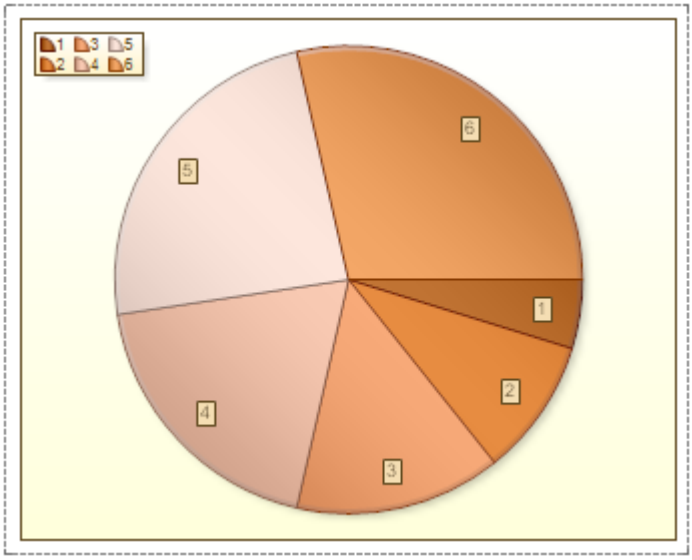
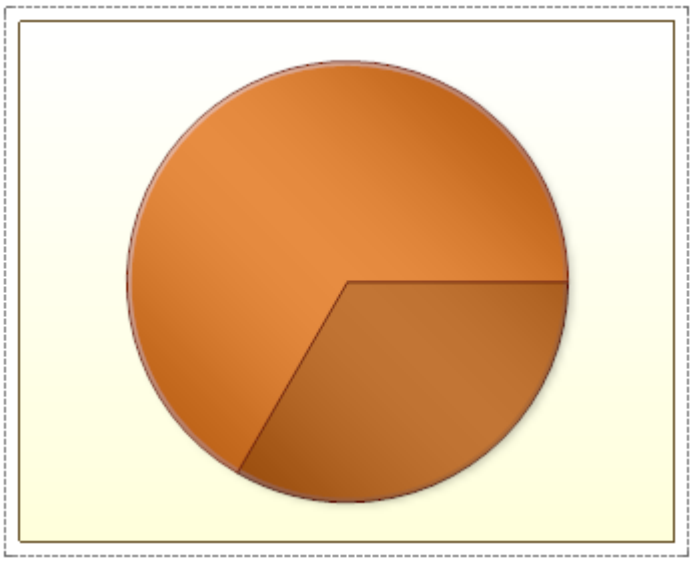



#### 2.26.2.2.1 Series Labels.

The location series labels, in the pie chart, depends on the value of the **SeriesLabels** property. This property may take the following values: None, Inside End, Center, Outside, Two Columns.

1. **None**. Series Labels are not shown. The picture below shows an example of a Pie chart with the **Series Labels** set to **None**:



2. **Inside End**. Series Labels are displayed inside the slice and far from the center. The picture below shows an example of a Pie chart with the **Series Labels** set to **Inside End**:

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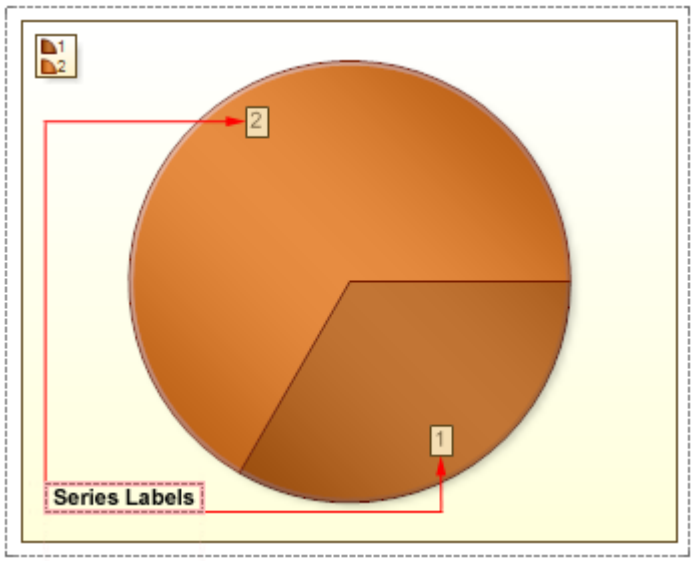
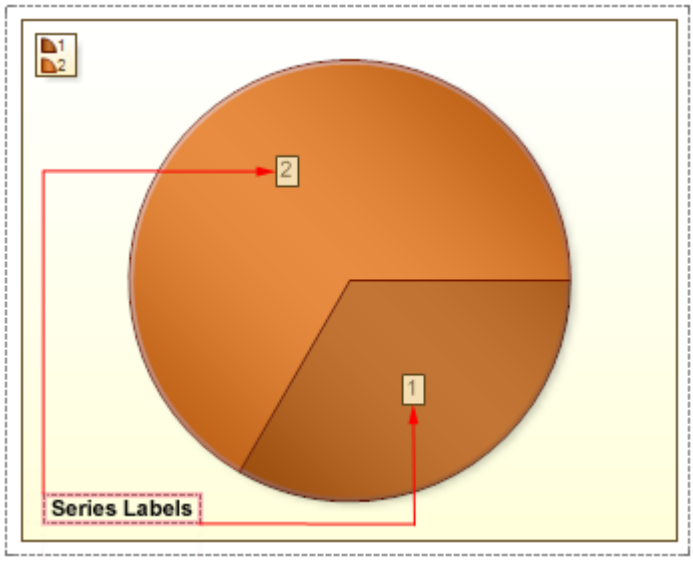



3. **Center**. Series Labels are displayed in the center of the slice. The picture below shows an example of a Pie chart with the **Series Labels** set to **Center**:




4. **Outside**. Series Labels are displayed outside the chart, but in a Pie area. The picture below shows an example of a Pie chart with the **Series Labels** set to **Outside**:

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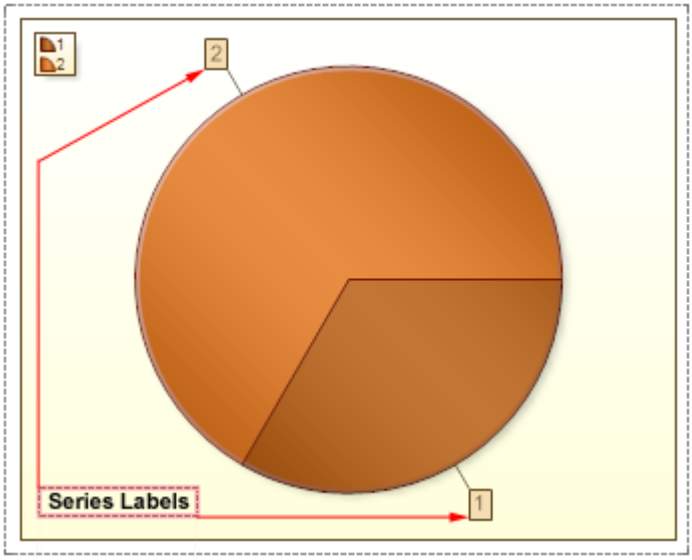
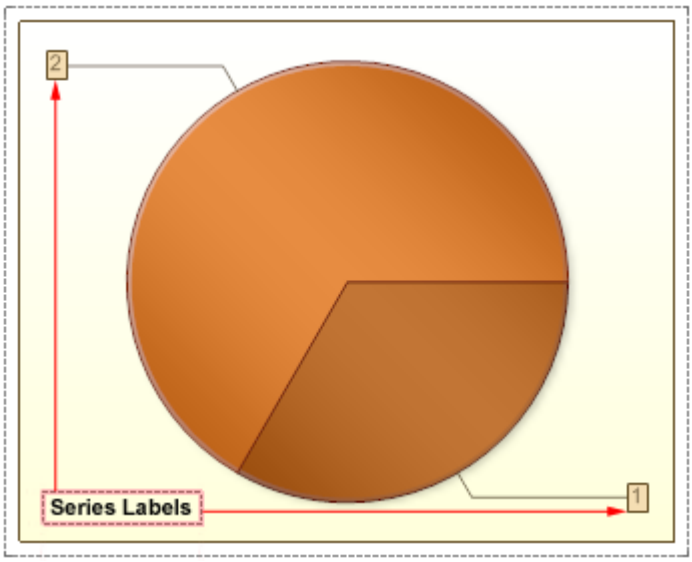



5. **Two Columns**. Series Labels are displayed outside the chart in two columns: on the left and right of the chart. The picture below shows an example of a Pie chart with the **Series Labels** set to **Two Columns**:




#### 2.26.2.2.2 CutPieList Property.

The Pie chart represents an opportunity to display the contribution of each value to a total while emphasizing individual values. To select a segment in a pie chart select and pull out, it is necessary, in the **Series Editor**, to specify values for the **Distance** and **CutPieList** properties of a series. The **Distance** property indicates is the distance from the center of the chart to the nearest point of the pull out segment. The **CutPieList** property has a list of series to be pulled out, separated with **';'**. The picture below shows an example of a pie chart, with the second slice of the first series

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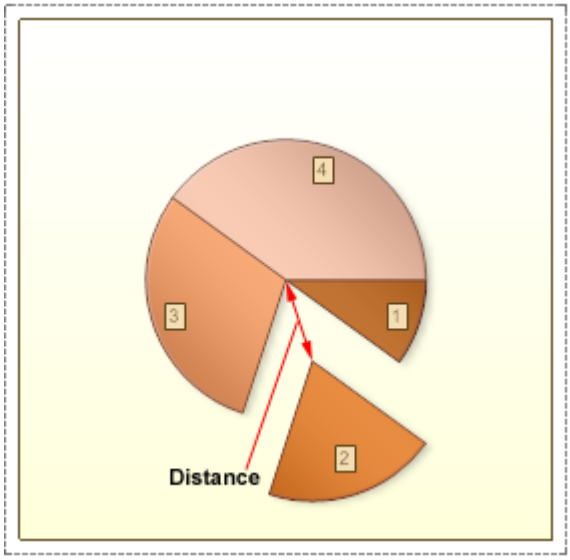
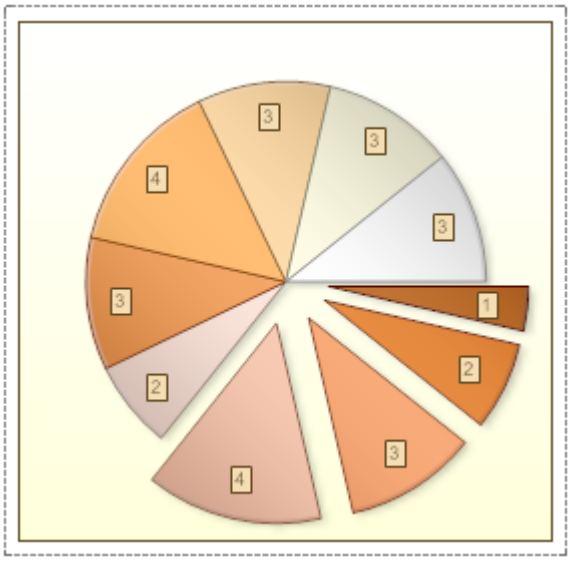
pulled out. The distance is 60-hundredths of inches:




If the field of the **CutPieList** property is filled, and the field of the **Distance** property is not filled, then the segments will not be pulled out. If the field of the **Distance** property is filled, and the field **CutPieList** property is not filled, then all segments of this series will be pulled out to the distance, which corresponds to the value of the **Distance** property. The picture below an example of a chart with all segments of the series 1 being pulled out, because the field of the **CutPieList** property was not filled, and the **Distance** property set to 30-hundredths of an inch:

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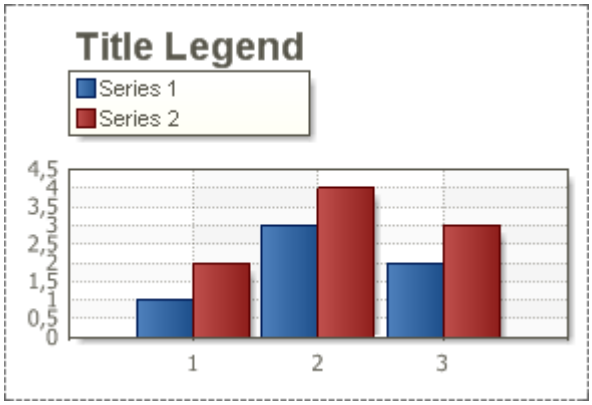
## 2.26.3. Legend

The chart may include a legend. A legend contains a list of the variables appearing in the chart and an example of their appearance. This information allows the data from each variable to be identified in the chart. The legend can be placed at any part of the chart.

### 2.26.3.1. Title Property

The **Title** property of the Legend allows setting the Legend title. The full path to this property is **Legend.Title**. If the the field of the **Title** property is not filled then the Legend title is not shown. The **Title** is shown over the Legend. The picture below shows a sample of the Chart with Legend where the "Title Legend" is the Legend title:




The **Title** property has the following properties:

- **TitleColor** - sets the Title color;
- **TitleFont** - sets the Title font size and font style.

### 2.26.3.2. HorizontalAlignment Property

The **HorizontalAlignment** property of the Legend allows aligning the Legend position horizontally. The full path to this property is **Legend.HorizontalAlignment.** The property has the following values: **Left Out Side**, **Left**, **Center**, **Right**, **Right Out Side**.

Description of values:
1. **Left Out Side**. The legend will be placed outside the Chart area on the left. The picture below shows where the Legend will be placed if the **Horizontal Alignment** property is set to **Left Out Side**:

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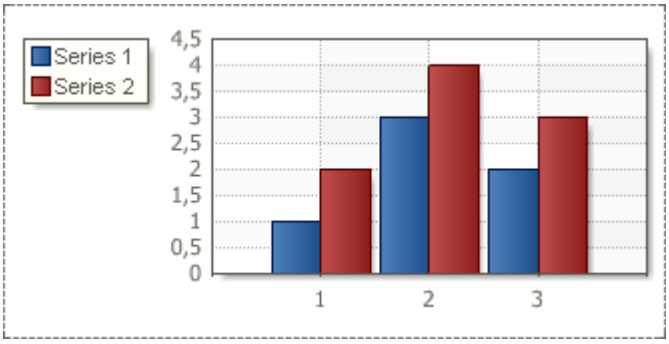
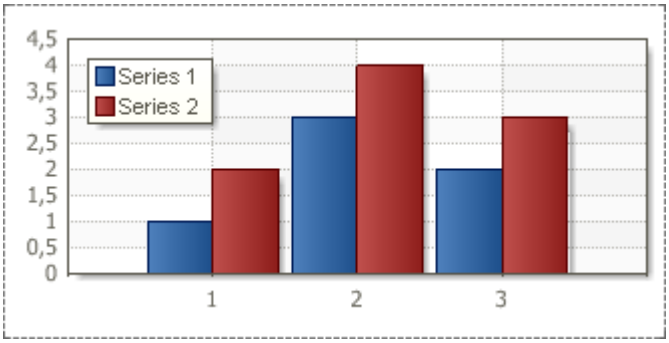
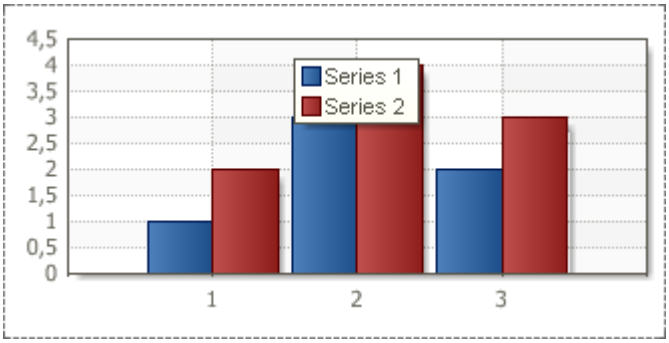



2. **Left**. The legend will be placed inside the Chart area on the left. The picture below shows where the Legend will be placed if the **Horizontal Alignment** property is set to **Left**:




3. **Center.** The legend will be placed inside the Chart area in the center. The picture below shows where the Legend will be placed if the **Horizontal Alignment** property is set to **Center**:




4. **Right**. The legend will be placed inside the Chart area on the right. The picture below shows where the Legend will be placed if the **Horizontal Alignment** property is set to **Right**:

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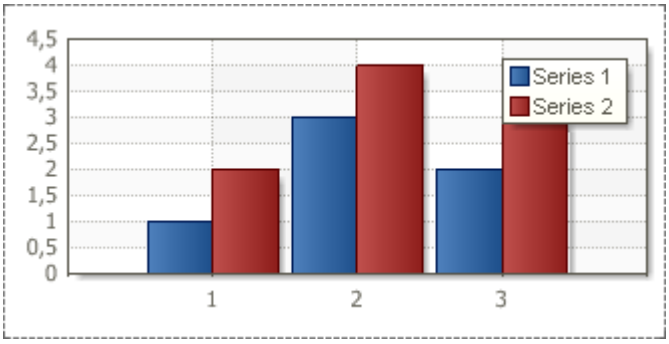
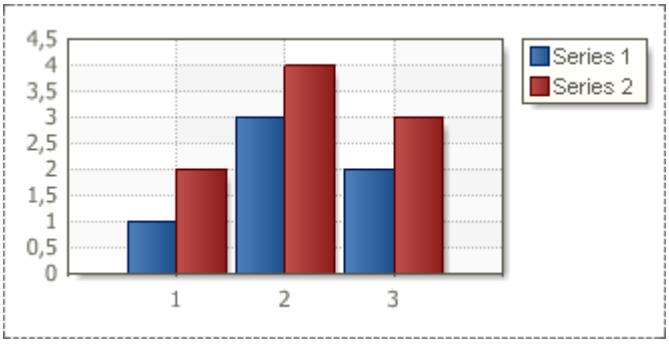



5. **Right Out Side**. The legend will be placed out side the Chart area on the right. The picture below shows where the Legend will be placed if the **Horizontal Alignment** property is set to **Right Out Side**:




By default the **HorizontalAlignment** property is set to **Left**.

### 2.26.3.3. VerticalAlignment Property

The **Vertical Alignment** property of the Legend allows aligning the Legend position vertically. The full path to this property is **Legend.VerticalAlignment.** The property has the following values: **Top Out Side**, **Top**, **Center**, **Bottom**, **Bottom Out Side**.

Description of values:
1. **Top Out Side**. The legend will be placed above and outside the Chart area. The picture below shows where the Legend will be placed if the **Vertical Alignment** property is set to **Top Out Side**:

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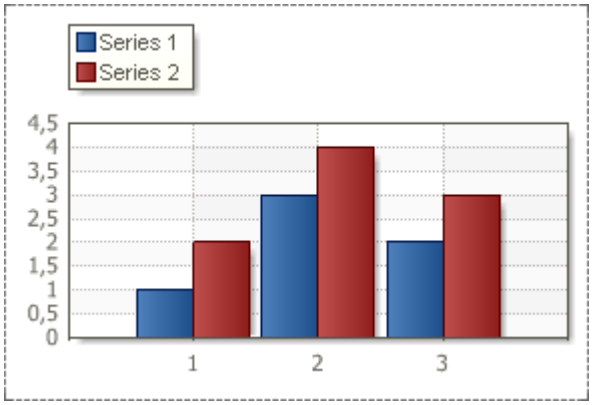
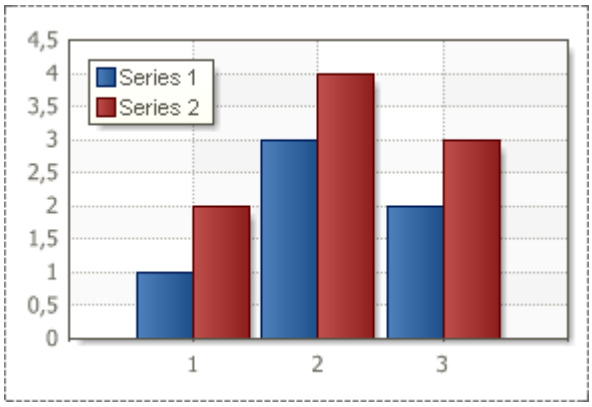
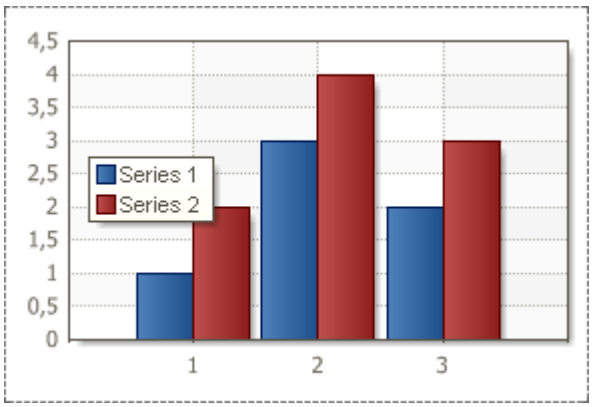



2. **Top**. The legend will be placed inside the Chart area on the top. The picture below shows where the Legend will be placed if the **Vertical Alignment** property is set to **Top**:




3. **Center**. The legend will be placed inside the Chart area and vertically in the center. The picture below shows where the Legend will be placed if the **Vertical Alignment** property is set to **Center**:




4. **Bottom**. The legend will be placed inside the Chart area on the bottom. The picture below shows where the Legend will be placed if the **Vertical Alignment** property is set to **Bottom**:

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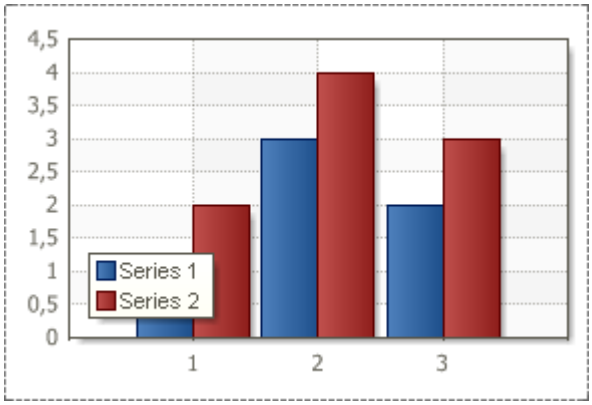
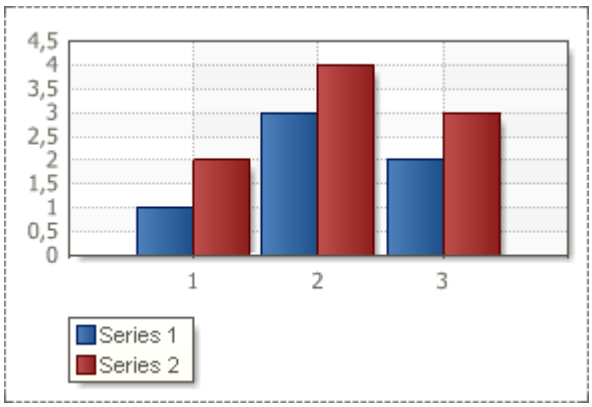



5. **Bottom Out Side**. The legend will be placed under and outside the Chart area. The picture below shows where the Legend will be placed if the **Vertical Alignment** property is set to **Bottom Out Side**:




By default the **Vertical Alignment** property is set to **Top**.

### 2.26.3.4. HorizontalSpacing and VerticalSpacing Properties

The **Horizontal Spacing** and **Vertical Spacing** properties allow setting the spacing (horizontal and vertical, respectively) between the Legend edge and the information on series. The full paths to these properties is **Legend.HorizontalSpacing** and **Legend.VerticalSpacing**. The picture below shows in arrows the horizontal and vertical spacing between the Legend edge and the Series 1:

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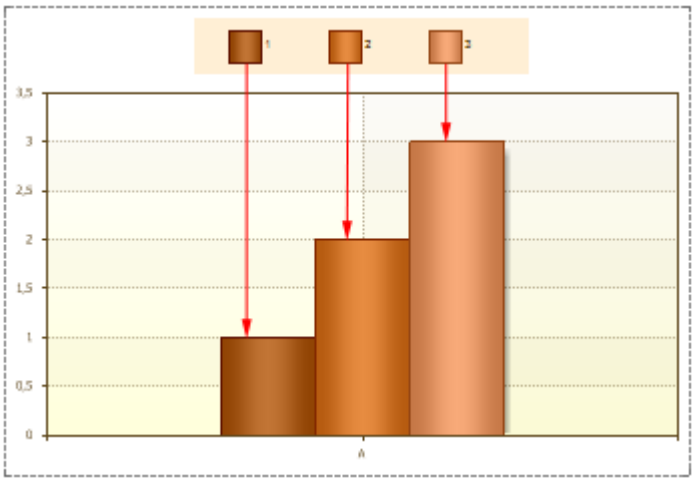
These properties can take numeric values, and are required for filling. If values of the **Horizontal Spacing** and **Vertical Spacing** properties are negative, then the legend can be unreadable. The minimum value of these properties is 0.

### 2.26.3.5. Marker

**Marker** is an icon that indicates the chert row. The number of markers correspond to the number of rows. On the picture below a sample of chart with three rows and markers for them is shown:



#### 2.26.3.5.1 Direction Property.

The **Direction** allows selecting the order of showing markers. The full path to this property is **Legend.Direction.** The property has the following values: **Top to Bottom**, **Bottom to Top**, **Left to Right**, **Right to Left**.

Description of values:
1. **Top to Bottom**. Markers are shown in the "from top to bottom" order. The picture below shows a sample of the Legend which the **Direction** property is set to **Top to Bottom**:

2. **Bottom to Top**. Markers are shown in the "from bottom to top" order. The picture below shows a sample of the Legend which the **Direction** property is set to **Bottom to Top**:

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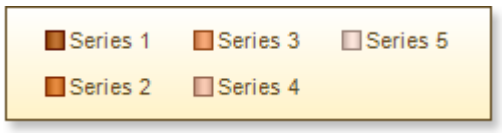
3. **Left to Right**. Markers are shown in the "from left to right" order. The picture below shows a sample of the Legend which the **Direction** property is set to **Left to Right**:

4. **Right to Left**. Markers are shown in the "from right to left" order. The picture below shows a sample of the Legend which the **Direction** property is set to **Right to Left**:

By default the **Direction** property is set to **Top to Bottom**.

#### 2.26.3.5.2 Columns Property.

The **Columns** property allows changing the number of columns vertically or horizontally depending on the value of the **Direction** property. The full path to this property is **Legend.Columns**. The picture below shows a sample of the Legend which markers are split into two horizontal columns (the **Direction** property is set to **Top to Bottom**):




If to set the **Columns** property to **2**, and set the **Direction** property to **Left to Right**, then markers will be split into two vertical columns. The picture below shows a sample of the Legend which markers are split into two vertical columns (the **Direction** property is set to **Left to Right**):

The **Columns** property may have any values more than **0**. This property must be set. It cannot be left empty.

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#### 2.26.3.5.3 MarkerAlignment Property.

The **Marker Alignment** property allows aligning markers either left or right from the "**Series**" name. The full path to this property is **Legend.Marker Alignment.** If the **Marker Alignment** property is set to **Left**, then the marker will be placed on the left from the "**series**" name. The picture below shows a sample of the Legend which the **Marker Alignment** property is set to **Left**:

If the **Marker Alignment** property is set to **Right**, then the marker will be placed on the right from the "**series**" name. The picture below shows a sample of the Legend which the **Marker Alignment** property is set to**Right**:

By default the **Marker Alignment** property is set to **Left**.

#### 2.26.3.5.4 MarkerVisible Property.

The **Marker Visible** property allows showing/hiding the legend markers. The full path to this property is **Legend.Marker Visible.** If the **Marker Visible** property is set to **true**, then markers are shown. The picture below shows a sample of the Legend which the **Marker Visible** property is set to **true**:

If the **Marker Visible** property is set to **false**, then the Legend markers are hidden. The picture below shows a sample of the Legend which the **Marker Visible** property is set to **false**:

By default the **Marker Visible** is set to **true**.

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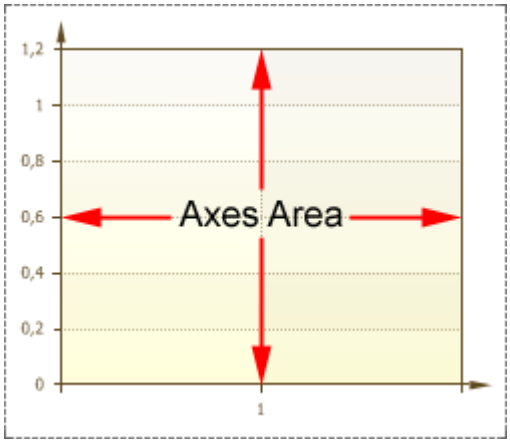
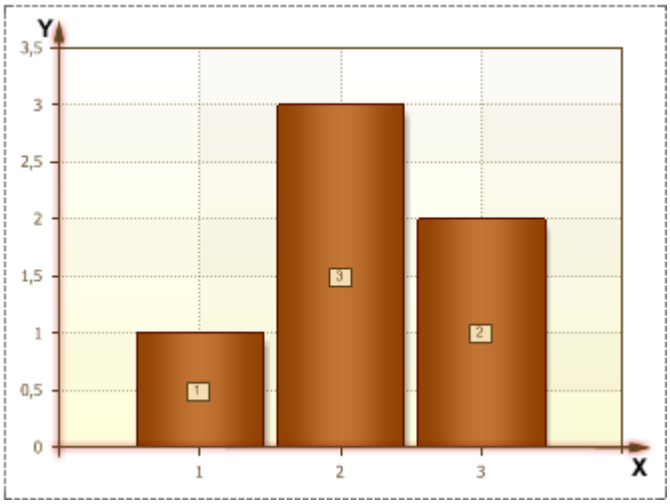
## 2.26.4. Axes Area

**Axes Area** is a space which includes all chart items such as data rows, axes, chart title, and legend. On the picture below the **Axes Area** is shown:




### 2.26.4.1. Axes

**Axes Area** has **X** and **Y** axes. The X axis, as a rule, is the axis of arguments, and the Y axis, is the axis of values.




Besides, the **Axes Area** can contain top and central **X** axis, and right **Y** axis.

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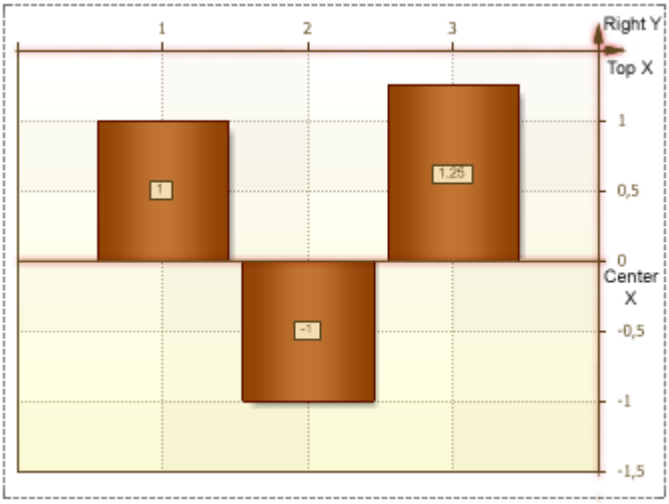
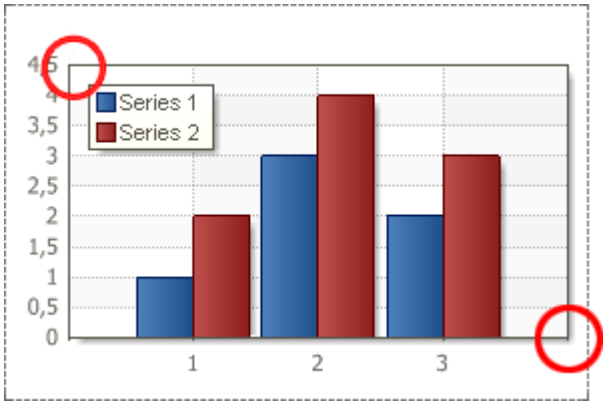



### 2.26.4.1.1 ArrowStyle Property.

Each axis has its own direction. The direction is identified with marker (usually it is an arrow). To change the arrow style, use the **Arrow Style** property of an axis**.** The path to this property is **Area. Axes.ArrowStyle**. On the picture below the sample of a rendered chart with the **ArrowStyle** property set to the **None** default value:




As you can see, if the **Arrow Style** property is set to **None**, then **X Y** axes do not have style. The **Arrow Style** property can be set to **Triangle.** In this case the arrow style will look like on the picture below:

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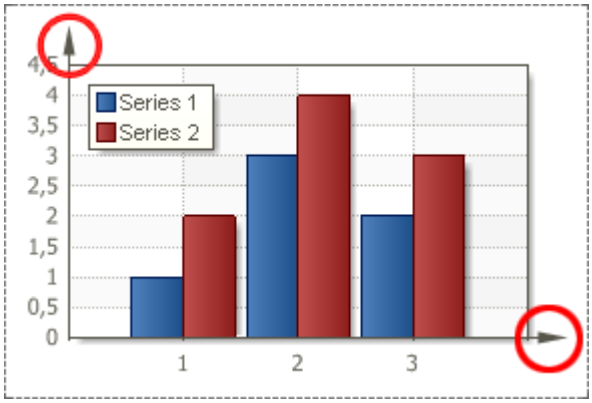
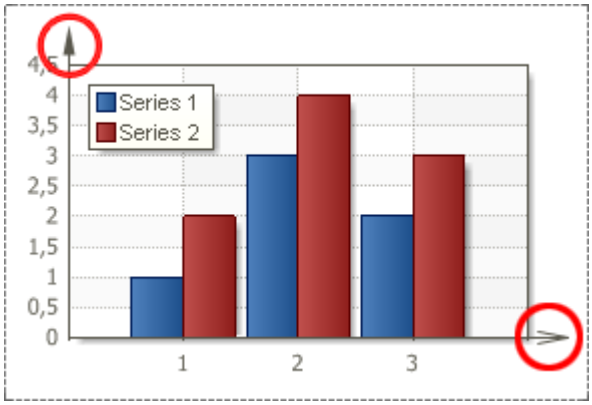



The **Arrow Style** property can be set for each axis. Each axis may have its own values of the **Arrow Style** property. On the picture below different values of the **Arrow Style** property of **X** and **Y** axes:




As seen from the picture above, the **Arrow Style** property, of the **Y** axis is set to **Triangle.** And the the **Arrow Style** property, of the **X** axis is set to **Lines.**

#### 2.26.4.1.2 Labels.

Labels are titles of X axis (the axis of the arguments) and Y (the axis values). Labels can take any string value. Any string value is transformed according to the selected format. If the report generator failed to convert a value to the selected format, then a direct string value is output. The picture below shows an example of a chart with arguments of Labels. The Format property is set to N:

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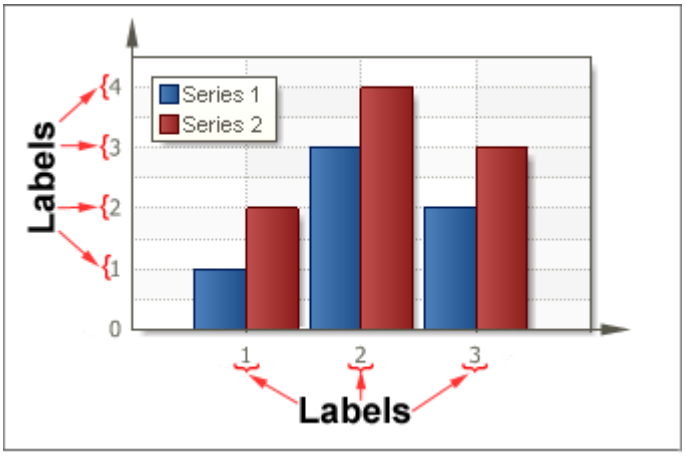
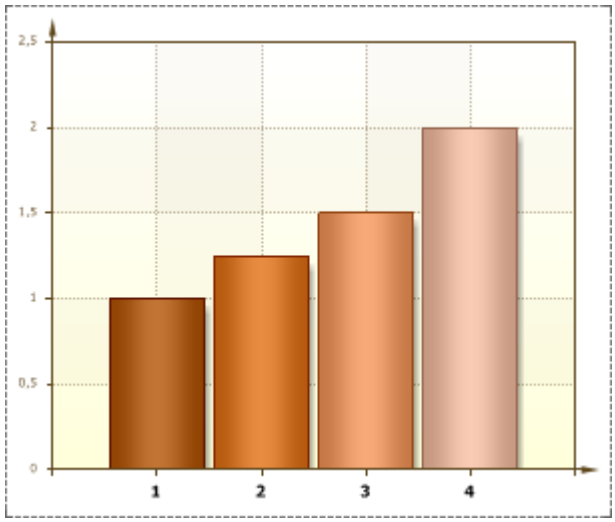



Also, Labels have a number of properties such as:

- **Angle** - sets an angle of inclination of labels;
- **Antialiasing** - sets smooth-edged type of labels;
- **Color** - sets the labels color;
- **Font** - sets the font type of labels;
- **Format** - changes the label format (numeric, percentage etc);
- **Placement** - changes the position of showing Labels;
- **Text before/Text after** - shows a text before/after Labels;
- **Text Alignment** - used for **Y** axis, aligns Labels;
- **Width** - changes the width of Label.

#### 2.26.4.1.2.1 Angle Property.

The **Angle** property is used to change the inclination of **Labels**. Specifies the angle, in degrees. The **Angle** property is set separately for each axis. The full path to this property is **Area.Axis.Labels.Angle**. By default, the value of the **Angle** property is set to **0.** So **Labels** are placed as it is shown on the picture below:

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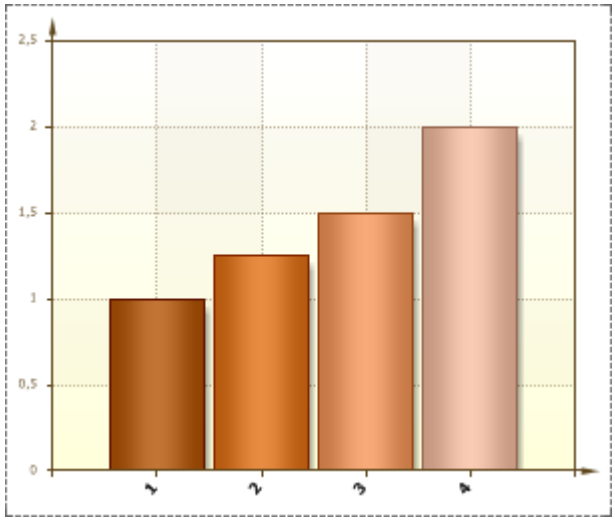
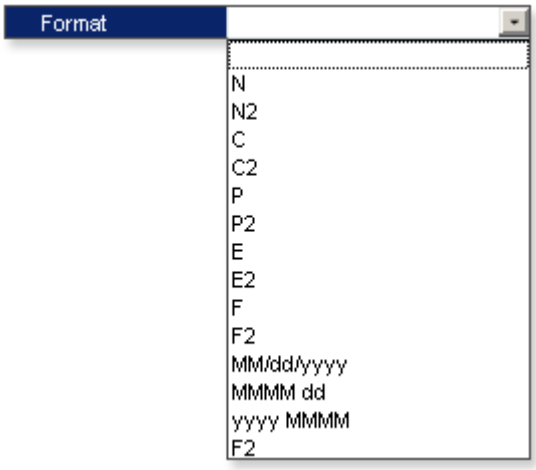
The value of this property can be negative and positive. If the value of the property is negative then Label is inclined clockwise. If the value of the property is positive then Label in inclined anticlockwise. The picture below shows the chart sample, which Angle property by the **X** axis is set to **50**:




#### 2.26.4.1.2.2 Format Property.

The **Format** property is used to to format the contents of Labels. The full path to this property is **Area.Axis.Labels.Format.** This property has multiple values.




1. **Number.** The **N** value of the **Format** property is used for the general display of numbers. When filling the **Format**, after the **N** value, it is possible to specify the number of decimal places that you want to use. If no numbers are specified after **N** then decimal places will be shown only if they are present as a result of calculation. The picture below shows a chart with the **Format** property of

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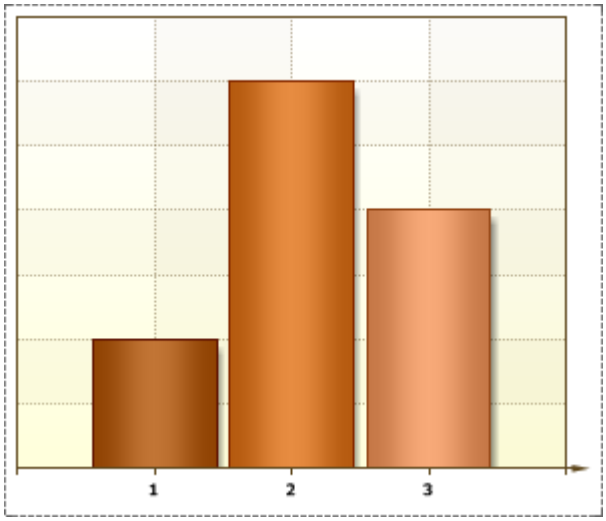
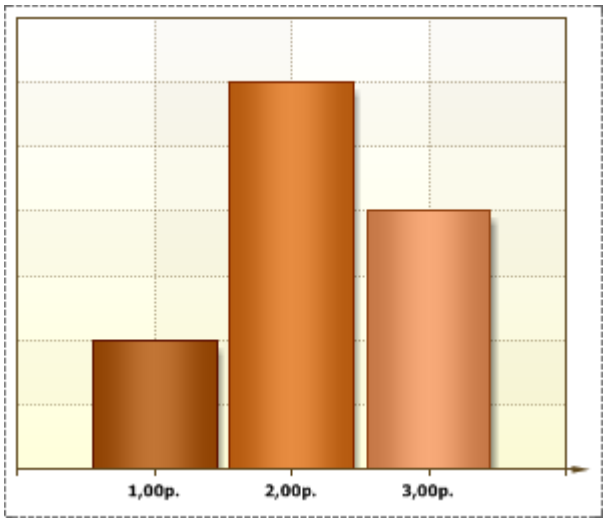
Series Labels set to **N**:




2. **Currency.** The **C** value of the **Format** property is used to display Labels with a currency symbol. After the **C** value, it is possible to specify the number of decimal places that you want to use. The picture below shows a chart with the **Format** property of Series Labels set to **C**:




3. **Percentage**. The **P** value of the **Format** property is used to display Labels with percent symbol. After the **P** value, it is possible to specify the number of decimal places that you want to use. The picture below shows a chart with the **Format** property of Series Labels set to **P**:

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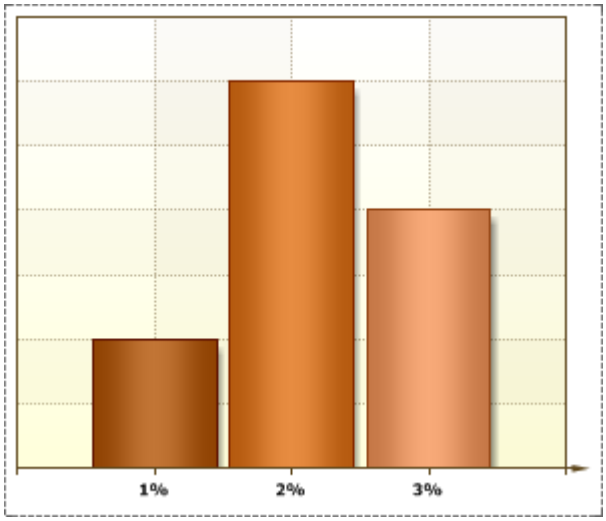
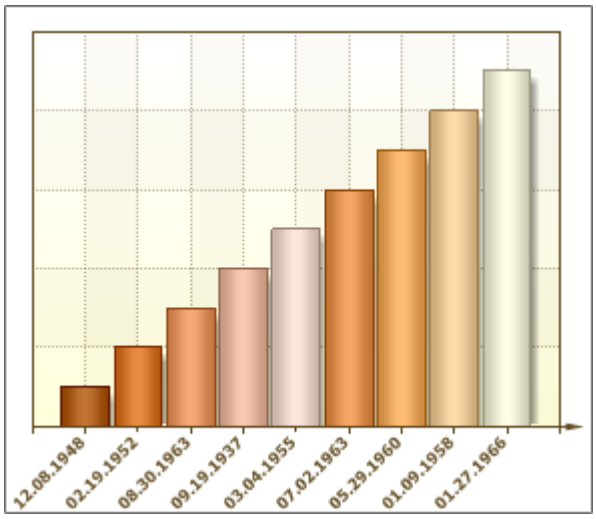



4 Date formatting. The **MM/dd/yyyy**, **MMMM dd**, **yyyy MMMM** values of the **Format** property convert values of arguments to date. **MM/dd/yyyy** - the date is shown like "01.20.2010", **MMMM dd** - the date is shown like "September 29", **yyyy MMMM** - the date is shown like "2010 March". The picture below shows a chart and its **Format** property is set to **MM/dd/yyyy**:




To reset the **Format** property of selected cells, and return to the default format, clear the Format by selecting empty field.

#### 2.26.4.1.2.3 Placement Property.

The **Placement** property is used to change position of labels. The full path to this property is **Area.Axis.Labels.Placement**. This property has three values: **One Line**, **Two Lines**, **None**.

1. **One Line**. In this case, labels are placed in a line horizontally or vertically, depending on the X or Y axis, respectively. The picture below shows an example of a chart, with the **Placement** property

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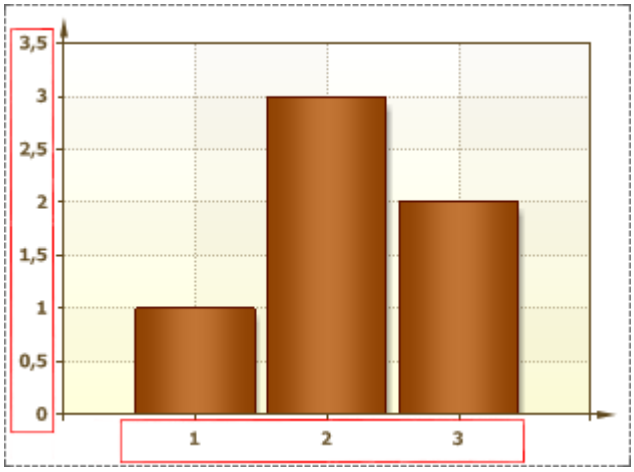
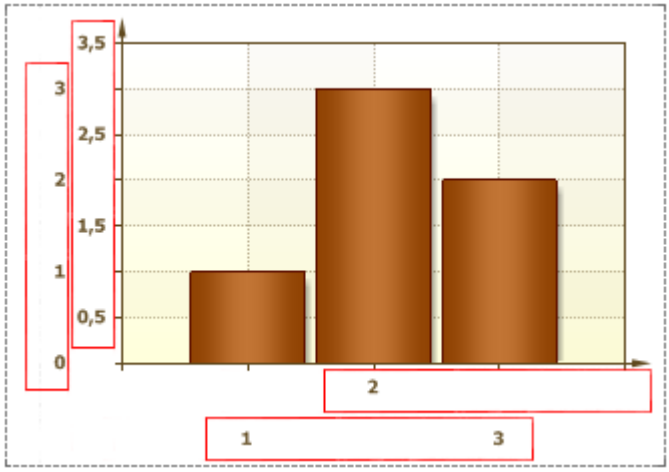
set to **One Line** for of X and Y axes:




2. **Two Lines**. In this case, labels are placed in two lines horizontally or vertically, depending on the X or Y axis, respectively. The picture below shows an example of a chart, with the **Placement** property set to **Two Lines** for of X and Y axes:




3. **None**. In the case labels are not shown. The picture below shows an example of a chart, with the **Placement** property set to **None** for of X and Y axes:

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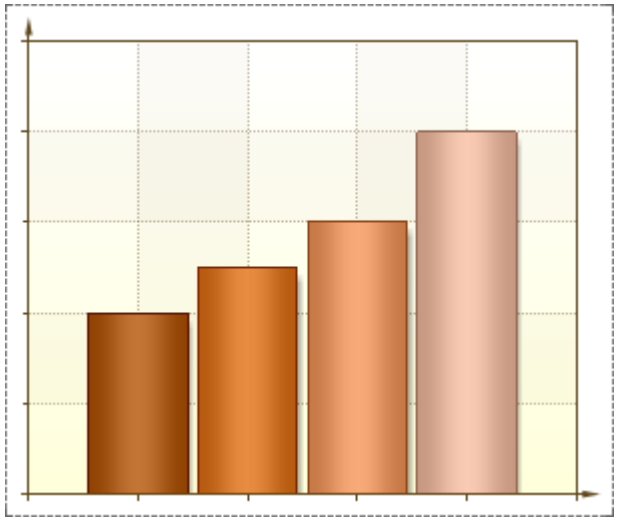
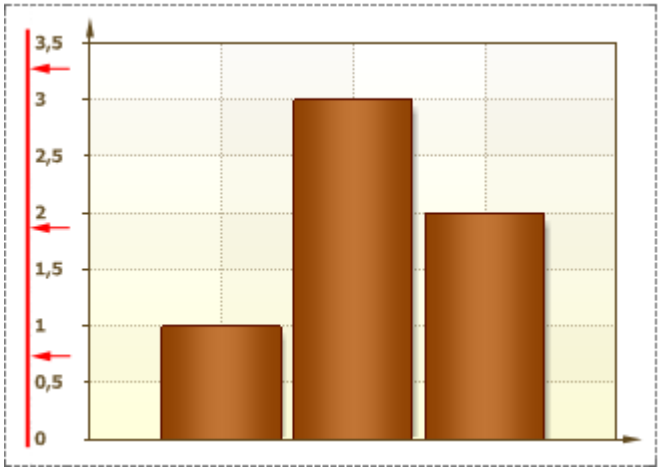


By default, the **Placement** property is set to **One Line**.

#### 2.26.4.1.2.4 TextAlignment Property.

The **TextAlignment** property is used to align labels on the chart or by Y axis. The full path to this property is **Area.Axis.Labels.TextAlignment**. If the **TextAlignment** property set to **Left**, then labels are aligned by the chart edge. The picture below shows an example of chart with the of **TextAlignment** property set to **Left**:




If the **TextAlignment** property set to **Right**, then the labels are aligned by the Y axis. The picture below shows an example of chart with the of **TextAlignment** property set to **Right**:

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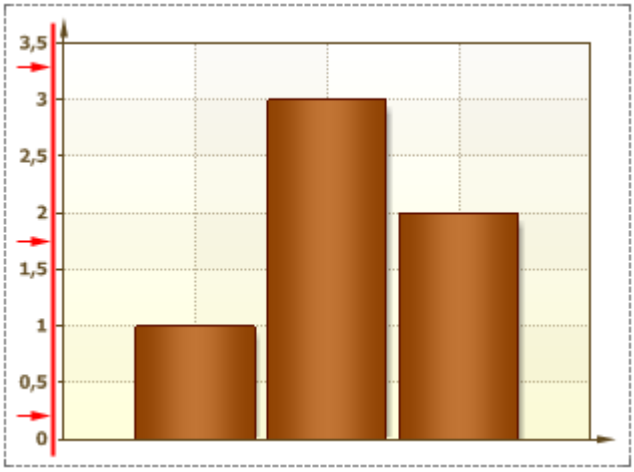
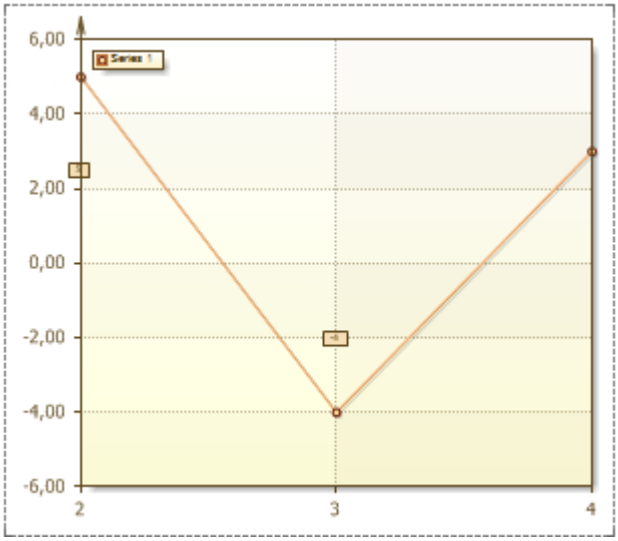



By default, the **TextAlignment** property is set to **Right**.

#### 2.26.4.1.3 Range Property.

The **Range** property is used to display the specified section of a chart. So a part of the chart within the specified values will be shown. The picture below shows a chart with the Range property set to the X-axis from 2 to 4:




The Range consists of the values of three fields:
1. **Auto**. If the Auto field is set to true, then a chart is shown entirely, i.e. the range of values will be calculated automatically. The picture below shows an example of it:

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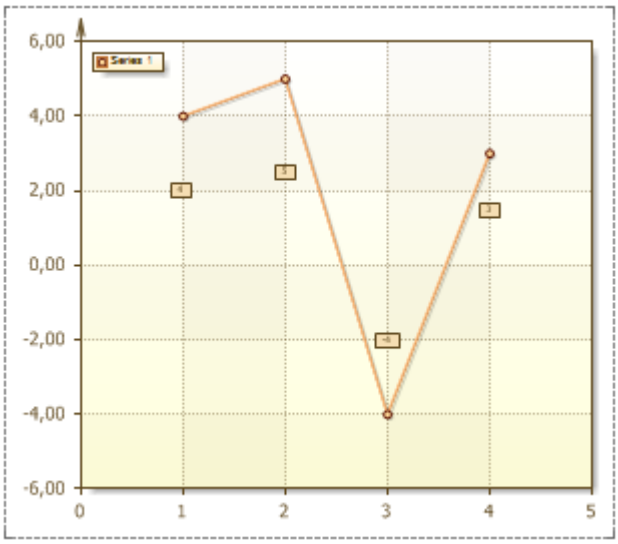
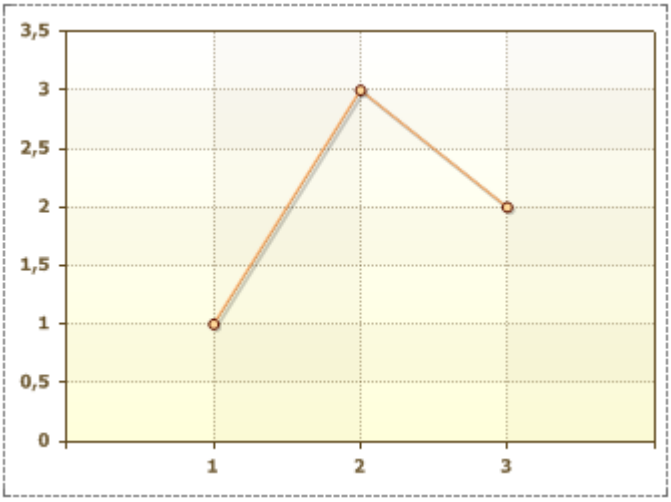



If the **Auto** field is set to **false**, then all values of the range which are specified in the **Minimum** and **Maximum** fields are considered. If the **Auto** field is set to **false**, and values the **Minimum** and **Maximum** fields are set to 0, then the chart will be shown entirely.
2. **Minimum** - sets the beginning of the range.
3. **Maximum** - sets the end of the range.
If the **Maximum** value is less then the **Minimum** value, then the chart will be displayed entirely.

#### 2.26.4.1.4 Visible Property.

The **Visible** property is used to show X and Y axes. The picture below shows a chart with the **Visibility** property set to **true** (axes are visible):




If the **Visible** property is to set the **false**, then X and Y axes will not be shown. The picture below shows this:

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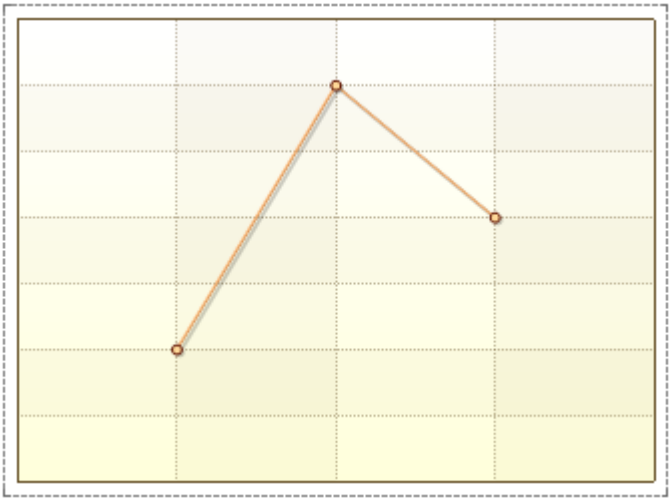
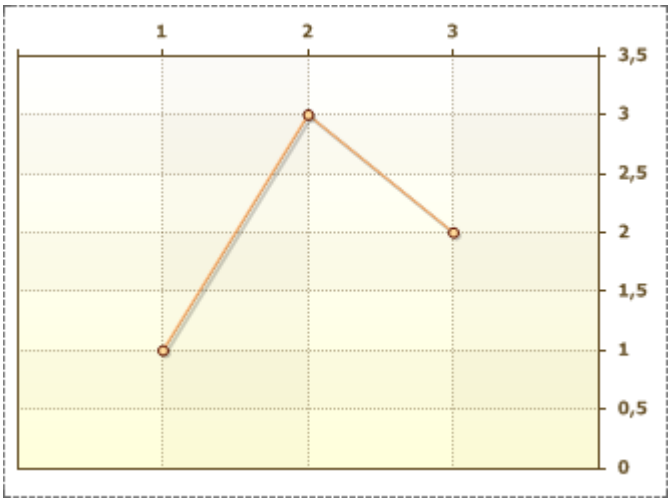


The **Visible** property has the X axis and the Y axis. It is possible to hide/show axes separately. Also, this property is used to display the top X axis and right Y axis. By default, for the axes, the property is set to **false**. The picture below shows an example of a chart, to display the top X axis and the right Y axis:




The **Visible** property has the top X axis and the right Y axis. It is possible a combination, for example, the top X axis and the left Y axis or the X axis and right Y axis or any other combinations. By default the **Visible** property is set to **true**.

#### 2.26.4.1.5 StartFromZero Property.

By default, the **Start from Zero** property is set to **true**. I.e. arguments are shown from the start to the end, regardless of the location of the chart. The picture below shows an example of a chart with the **Start from Zero** property set to **true** for the X and Y axes:

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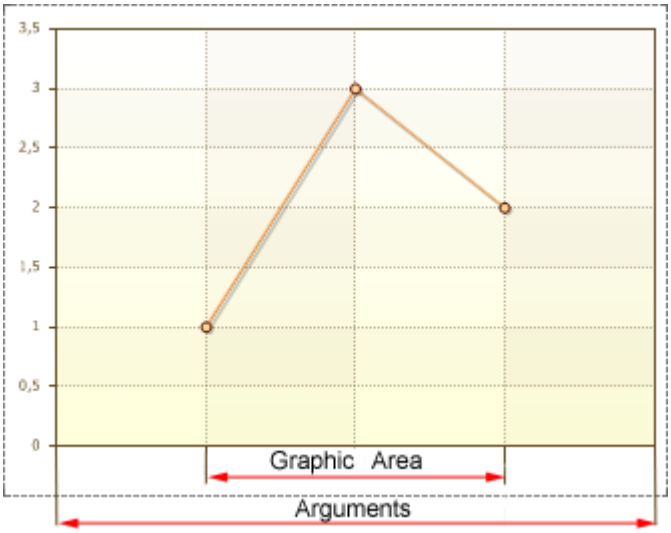
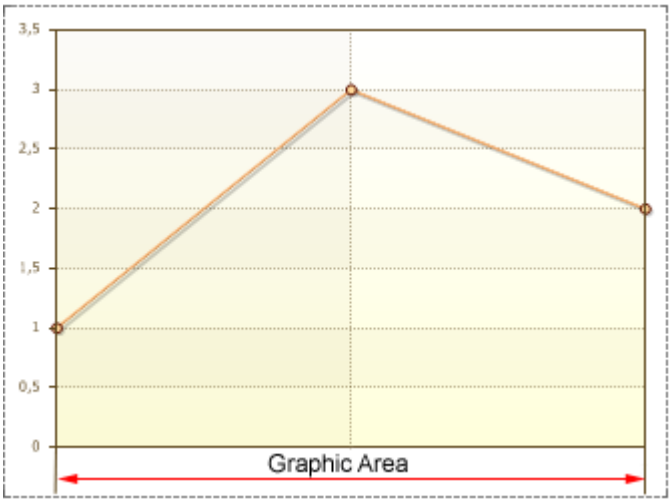



If the **Start from Zero** property to set **false**, then the Range of the chart area will be shown. The picture below shows an example of a chart with the **Start from Zero** property set to **false** for the X axis:




#### 2.26.4.1.6 Ticks.

**Ticks** are horizontal (for the Y axis) and vertical (for the X axis) lines, which visually show the unit interval and the proportion of segments. Under the **Ticks** labels are displayed. The picture below below shows a chart with ticks:

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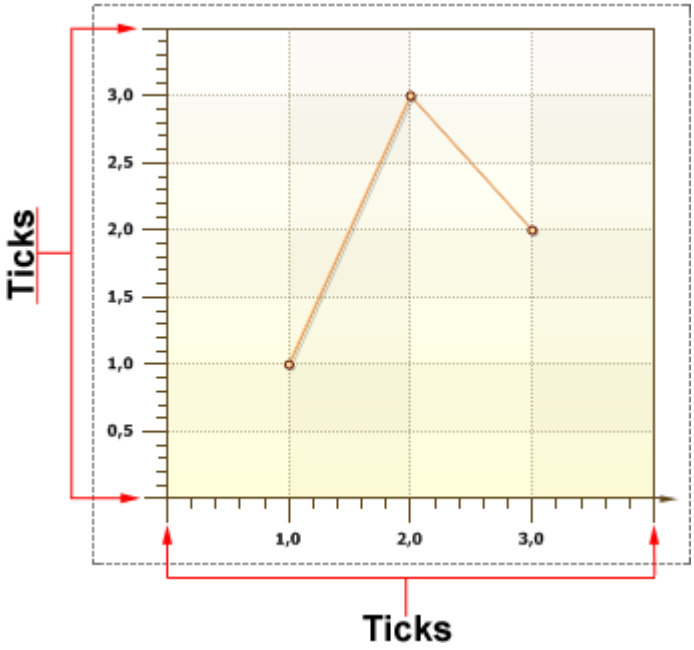


Ticks have the following properties:

- **Length** is the length of ticks, under which Labels are placed;
- **Minor Count** allows changing the number of intermediate lines (Minor ticks);
- **Minor Length** is the length of the intermediate lines (Minor ticks);
- **Minor Visible** is used to show/hide the intermediate lines (Minor ticks);
- **Step** controls the step of the unit interval, i.e. distance between ticks;
- **Visible** is used to show/hide **Ticks**, both basic and intermediate.

#### 2.26.4.1.6.1 Minor.

**Minor ticks** show the proportion of a single axis segment. **Minors ticks** have the following properties: **MinorCount**, **MinorLength**, **MinorVisible**.

1. **Minor Count** is used to change the number of Minor ticks. The value of this property can be any positive number or 0. The distance between two nearest Major ticks is divided into the number of Minor ticks into equal parts. The picture below shows an example of a chart, with the **Minor Count** property set to 4 for X and Y axes:

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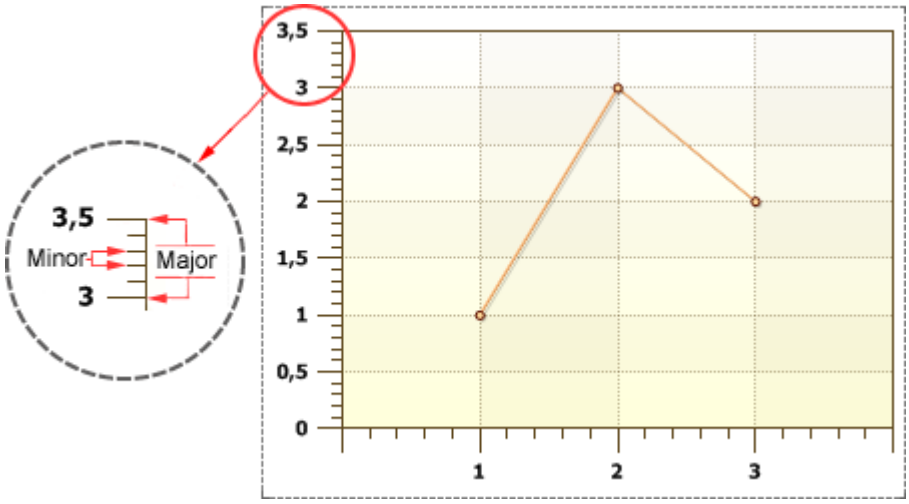
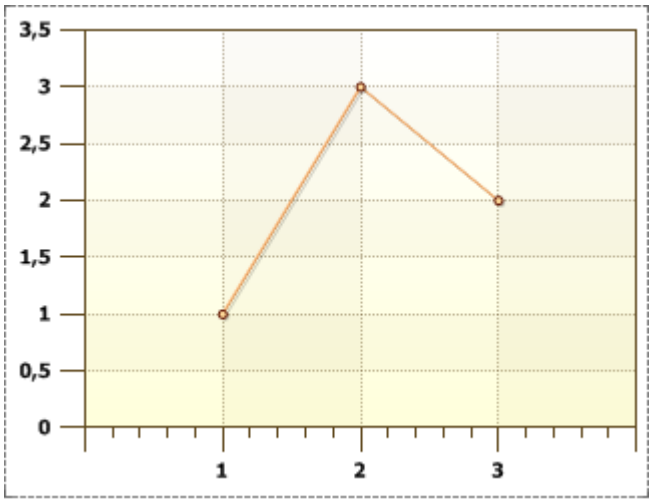



2. **Minor Length** is used to change the length of Minor ticks. The value of this property can be any positive number greater than 0, the field of this property can not be left blank. The length of Minor ticks can be longer than the length of Minor ticks.

3. **Minor Visible** is used to show/hide Minor ticks on axes. If the **Minor Visible** property is set to **false**, then the Minor ticks are hidden. If the value of this property is set to **true**, then the Minor ticks are shown. The picture below shows an example of a chart, with the **Minor Visible** property set to **true** for X axis, and set to **false** for Y axis:




By default, the **Minor Visible** property is set to **false**.

#### 2.26.4.1.6.2 Step Property.

The **Step** property is used to change the step between Ticks, i.e. the distance between neighbor Major ticks. By default, the value of the **Step** property is set to 0. The picture below shows an example of a chart with the Step is installed to the 0 default value.

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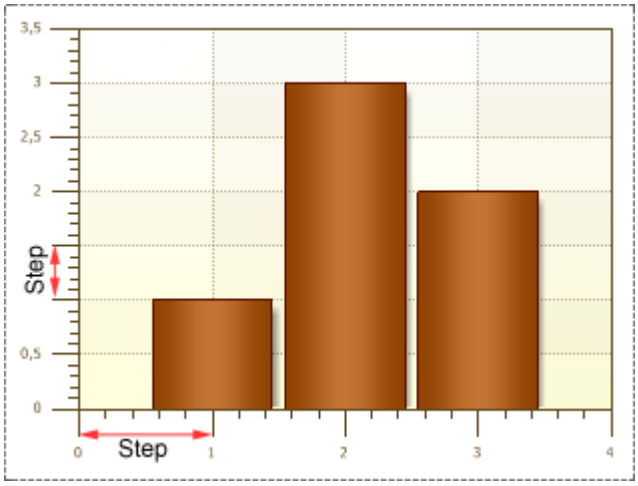
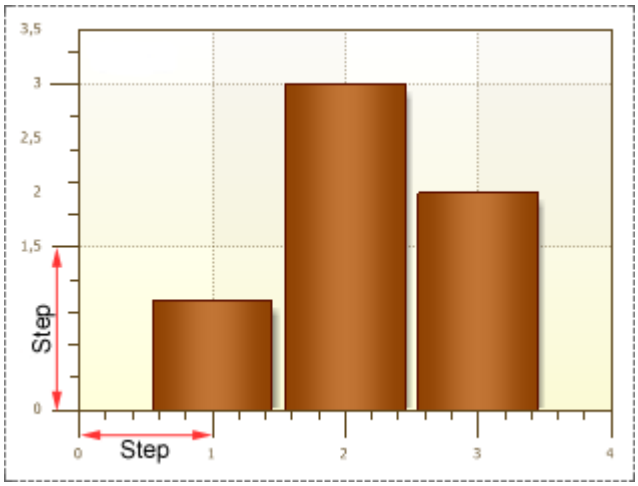



As one can see, if the value is 0, then the distance between two between neighbor Major ticks by the Y axis is **0.5**, and **1** by the X-axis. If to set the Step property to **Z** value, then the report generator will multiply **Z** value by the value of the unit interval. The result obtained is the distance between two neighbor Major ticks. The picture below shows an example of a chart, with the step on the Y axis set to **1,5**, and the X axis value set to **1**:




#### 2.26.4.1.7 Title Property.

The **Title** property is a title of axis. This property is used to display an axis title. Moreover, the **Title** property for each axis is given separately. The picture below shows a chart where the **X** axis is called the "**Arguments**", and the axis **Y** is called "**Values**":

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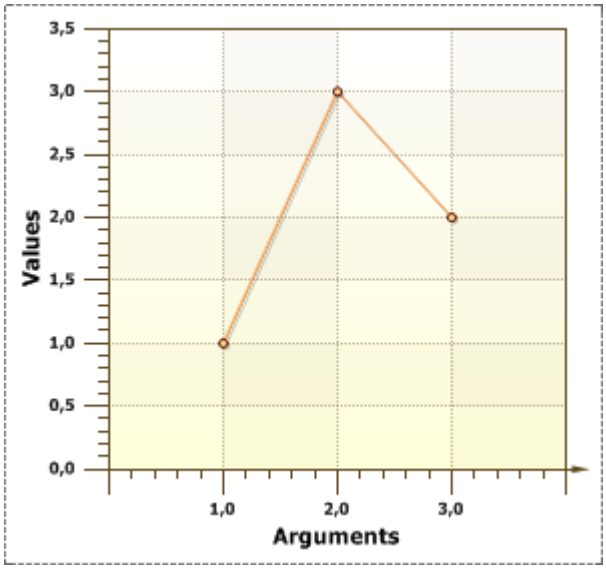


Also, the **Title** property has the following properties:

- **Alignment** is used to align the **Title**. It has the following values **Center** (align center), **Far** (align from the beginning of an axis), **Near** (align to the beginning of an axis);
- **Antialiasing** is used to produce smooth-edged **Titles**;
- **Color** is used to change a title text of an axis;
- **Font** is used to change the size, font style of a title text of an axis;
- **Text** is a field to type a title text of an axis. If the field is empty then the title of an axis is not displayed.

#### 2.26.4.1.7.1 Alignment Property.

The **Alignment** property is used to align a title of an axis. The full path to this property is **Area.Axes.Title.Alignment**. This property has the following values: **Center**, **Far**, **Near**.

1. **Center**. Aligns the title of the axis by center by the axis. The picture below shows an example of a chart, with the **Alignment** property of a title of the X axis set to **Center**:

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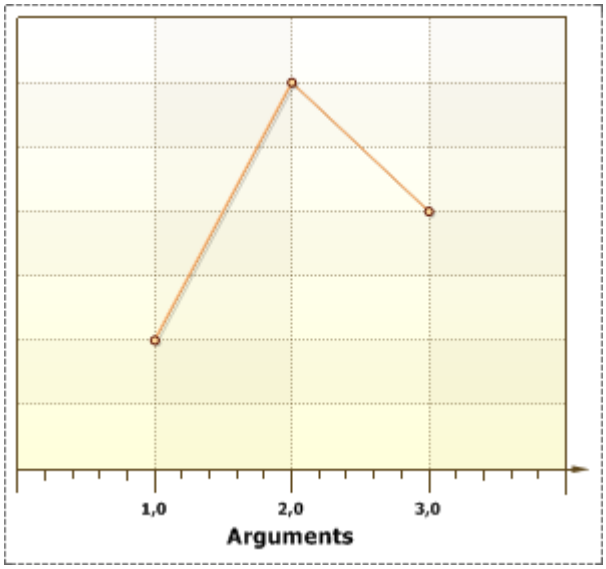
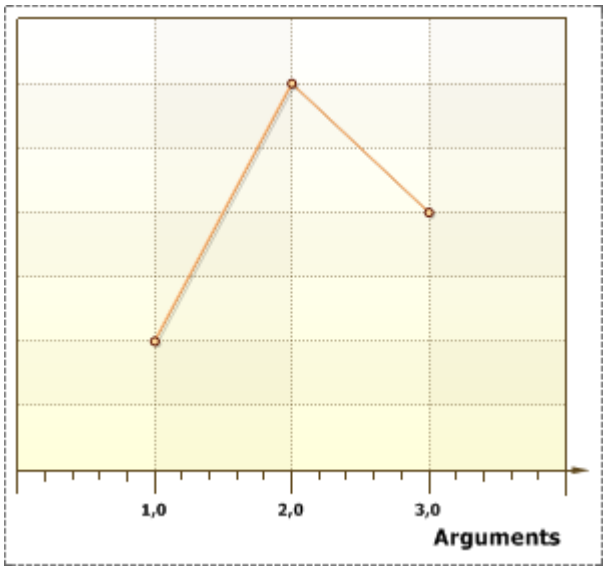



2. **Far**. Aligns the title of the axis on the opposite side from origin of coordinates. The picture below shows an example of a chart, with the **Alignment** property of a title of the X axis set to **Far**:




3. **Near**. Aligns the title of the axis on the near the origin of coordinates. The picture below shows an example of a chart, with the **Alignment** property of a title of the X axis set to **Near**:

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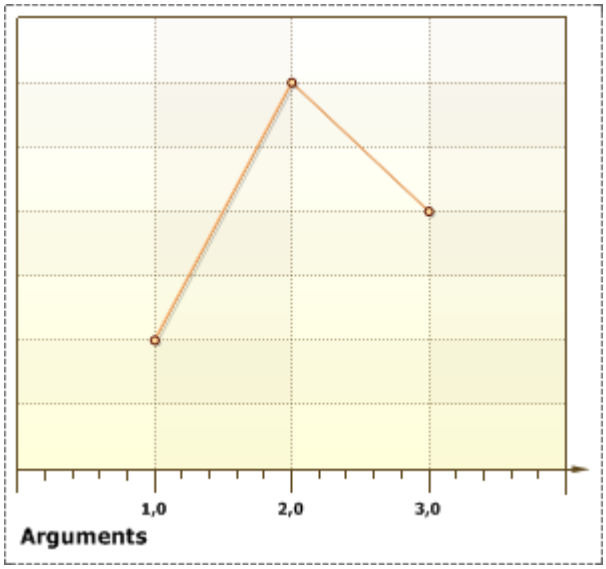
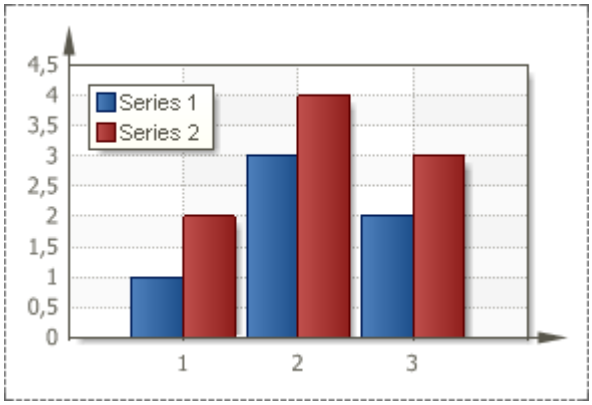



By default, the **Alignment** property of series is set to **Center**.

### 2.26.4.2. ReverseHorizontal Property

The **Reverse Horizontal** property is used to flip a chart horizontally. The picture below shows an example of a chart, with the **Reverse Horizontal** property set to **false** (As one can see, the values of the x-axis have left to right direction.):




If the **Reverse Horizontal** property is set to **true**, then the chart will appear in the opposite direction horizontally. The picture below shows an example of a chart, with the **Reverse Horizontal** property is set to **true** (As one can see, the values of the x-axis have right to left direction.):

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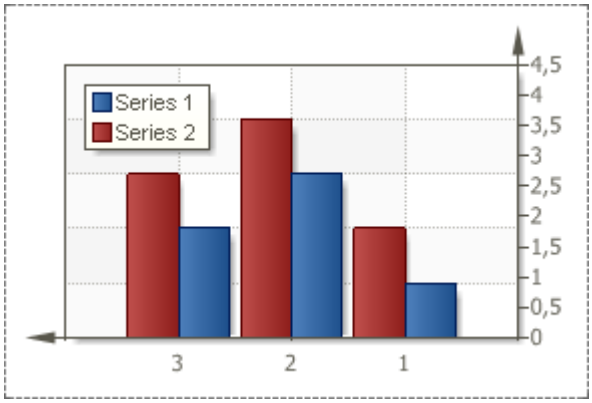
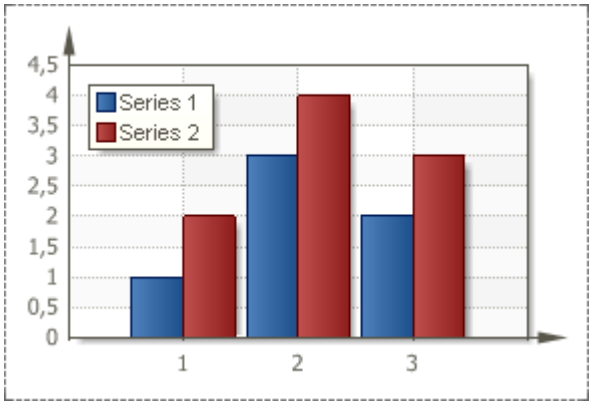



By default, the **Reverse Horizontal** property is set to **false**.

### 2.26.4.3. ReverseVertical Property

The **Reverse Vertical** property is used to flip a chart vertically. The picture below shows an example of a chart, with the **Reverse Vertical** property set to **false** (As one can see, the values of the x-axis have normal direction.):




If the **Reverse Vertical** property is set to **true**, then the chart will appear in the opposite direction vertically. The picture below shows an example of a chart, with the **Reverse Vertical** property is set to **true** (As one can see, the values of the x-axis have downright direction.):

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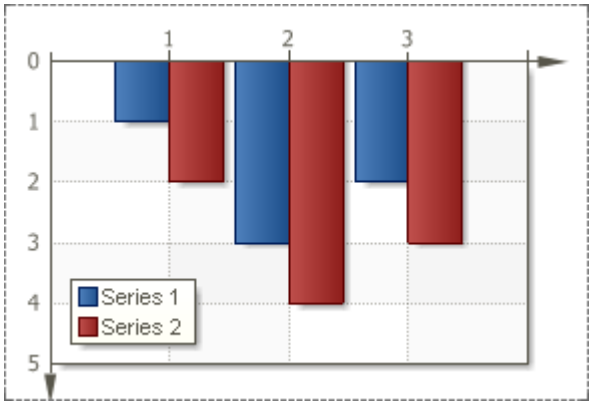
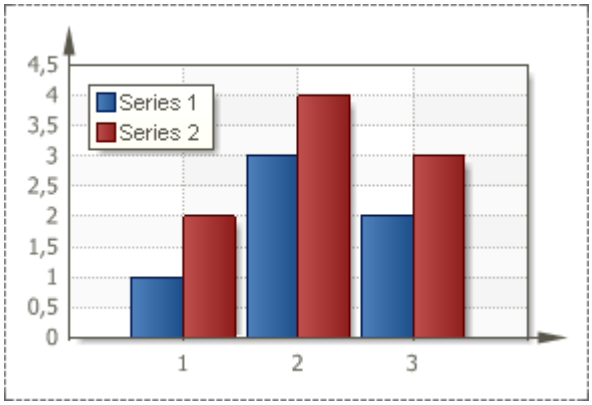



By default, the **Reverse Vertical** property is set to **false**.

### 2.26.4.4. ColorEach Property

The **Color Each** property is used (depends on the selected style) to set color for each value of a series. By default, the **Color Each** property is set to **false**, i.e. columns of one row have the same color. The picture below shows an example of a chart with the **Color Each** property set to **false** for two series:




If the **Color Each** property is set to true, then each value of X axis has its own color. The picture below shows an example of a chart with the **Color Each** property set to **true** for two series:

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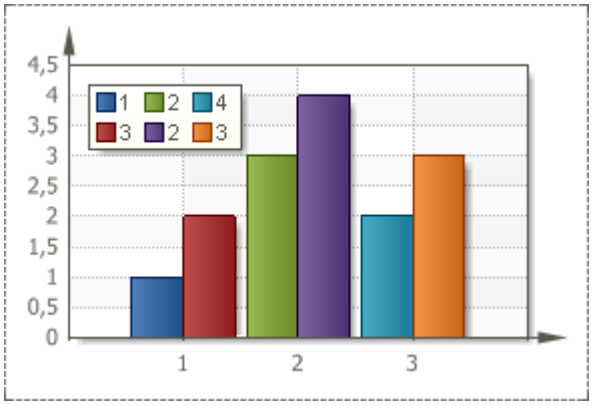


## 2.26.5. Series

**Series** type depends on the chart type. They are divided into series, placed on doughnut charts, and placed in the axis area.

### 2.26.5.1. Data Connection

One of the main settings of the series is specifying the way of obtaining data. There are three ways to obtain data for the series:
1. To set the column data from the dictionary;
2. To specify an expression;
3. Manually specify values for the series as a list, through the '**;**' separator.

#### 2.26.5.1.1 Data Column.

The **Value Data Column** and **Argument Data Column** properties are used to connect a series by specifying a data column from the dictionary. The reporting tool renders series of charts by values and arguments of the column selected in the fields of the **Value Data Column** and **Argument Data Column** properties. For example, if the selected column of data from the data source contains the 1000 values, then all the 1000 values will be used in constructing the chart. The picture below shows an example of the chart, so the values from the selected data source column:

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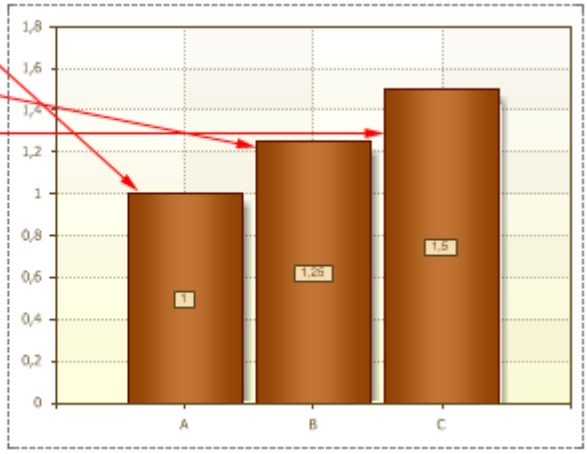
| Value | Argument |
|---|---|
| 1 | A |
| 1.25 | B |
| 1.5 | C |




#### 2.26.5.1.2 Expressions.

To connect a series of data using the expression, you should use the **Value** and **Argument** properties. The values of these properties are expressions, the result of their calculation is used to obtain a single value of data and argument of data. If you use the Value and Argument properties, then, for this chart, it is necessary to select a data source (the Data Source property), because expressions specified in the fields of these properties are not lists of data and return only one value when calculating. Moreover, the **Value** property returns the value in Number format, but the **Argument** property allows any type of data. To make the report generator know which list should be used for the report, it is necessary to indicate the data source. Once the data source is specified, the report generator runs through all the records of the data source and calculates all the values and arguments according to expressions given in the fields of the **Value** and **Argument** properties. The result of the calculation is used to create a chart. Also, for the data in the data source, you can specify sorting and filtering. The picture below shows an example of a chart, rendered on the basis of results of values and arguments calculations of the selected column of the data source:

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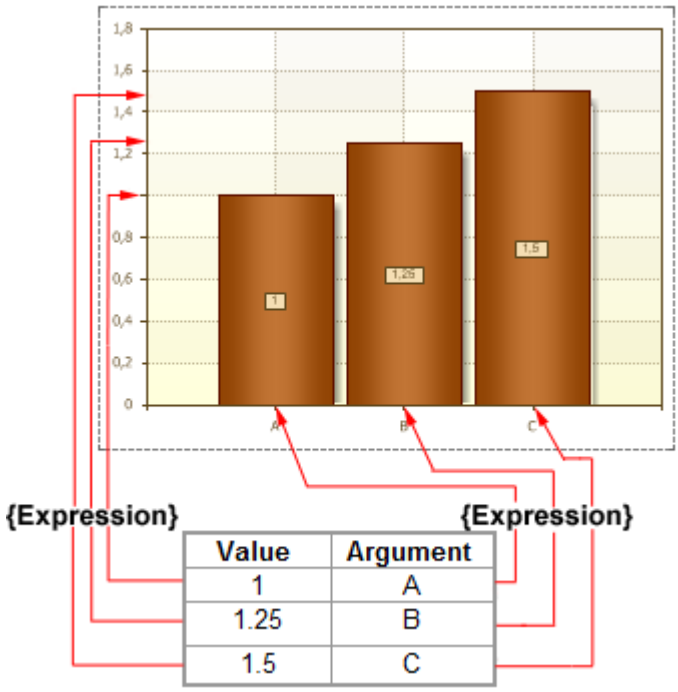
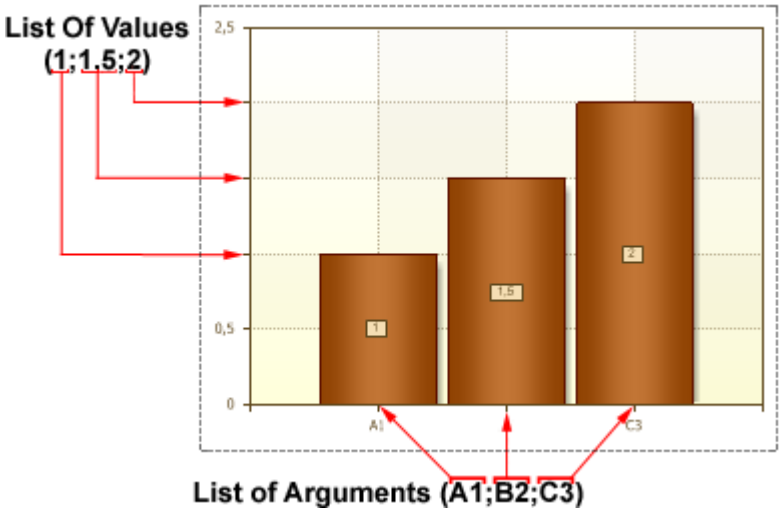



#### 2.26.5.1.3 List of Values Property.

If it is necessary to build a chart by the given values and arguments, then one should use the **List of Values** and the **List of Arguments** properties. The **List of Values** indicates values for creating series (values must be entered through the **';'** separator). The **List of Arguments** property indicates arguments for creating series (values must be entered through the **';'** separator). The order number of the **List of Values** property values corresponds to order number of the **List of Arguments** property values. The picture below shows an example a chart, designed by the list of values and arguments:

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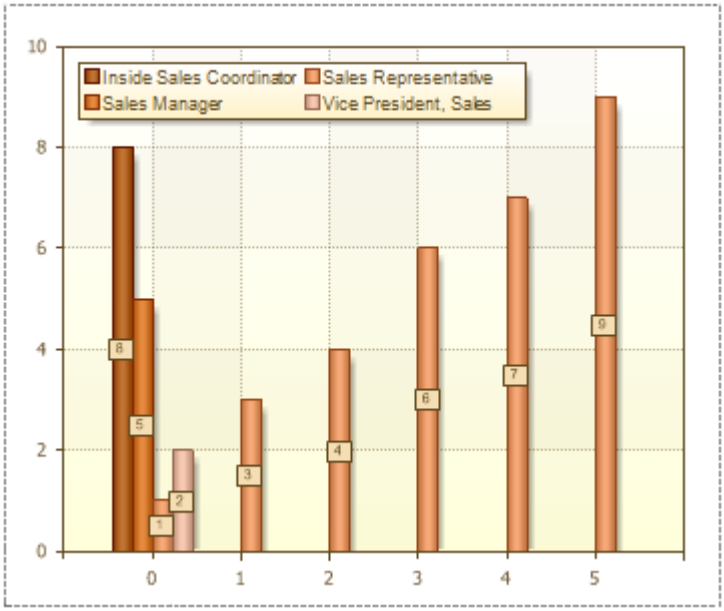
### 2.26.5.2. AutoSeries

Stimulsoft Reports can automatically create a series. Use the **Auto Series Key Data Column**, **Auto Series Color Data Column**, and **Auto Series Title Data Column** properties. A column from which values are taken to build the series is selected in the **Auto Series Key Data Column** property. A series is created for each unique value. The picture below shows an example of a chart with the **Auto Series Key Data Column** property set to **Employees.Title**:




There are 4 rows on the picture above. The 1st, 2nd, 4th series have one value, and the 3rd series has 6 values. This means that the **Employees** data source in the **Title** column contains **9** lines, and 6 lines have identical values (records), and the remaining three are different. Values (records) of rows in the data source are shown in a rendered chart in the legend, as well as the name of the series, if the field of the **Auto Series Title Data Column** property is empty. The **Auto Series Color Data Column** property is used to specify the color range, i.e. each series will have its own color. This property is subsidiary, and is not required to fill in the automatic creation of the series. Also, the subsidiary property and the **Auto Series Title Data Column** property, using what it is possible to change the title of the series. The picture below shows an example of a chart, with the **Auto Series Key Data Column** property set to **Employees.Title**, and the **Auto Series Title Data Column** property set to **Employees.EmployeeID**:

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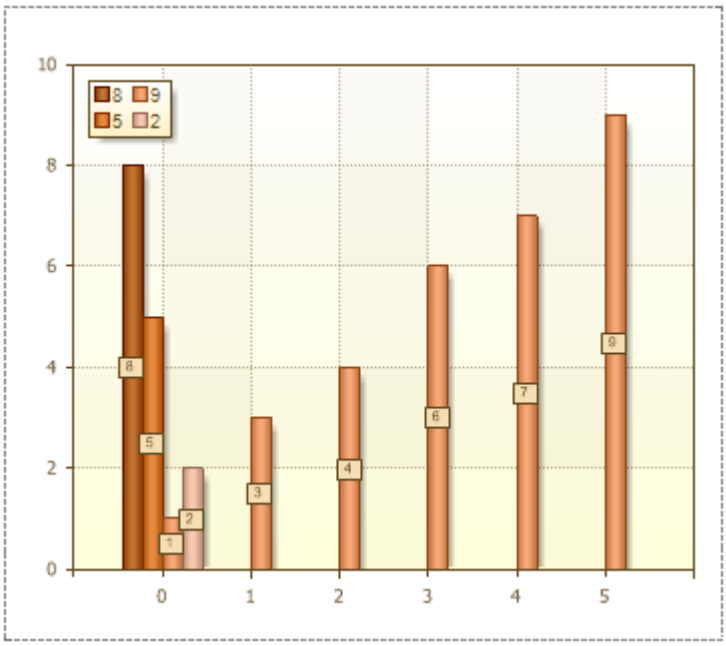
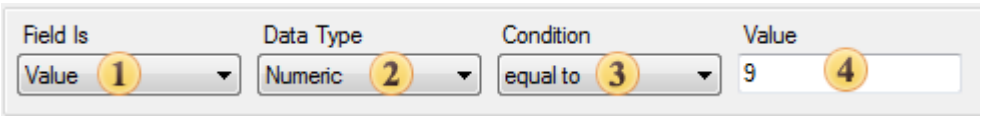



As seen from the picture above, the series labels are changed. As the series labels, string values are taken from the columns of the data source that is listed in the **Auto Series Title Data Column** property, in this case, this is the **EmployeeID** column.

### 2.26.5.3. Filters

Sometimes, in creating reports, it is necessary to print, not all values from the data source, but only those that meet specific criteria. In order to select the required settings, data filtering is used. Filtering is set using the **Filters** property in the **Series Editor**. A condition is specified is each filter. If the condition is **true**, i.e. the result of its calculation is **true**. This means that this value will be used when chart rendering. If the result of calculation of the filter condition is **false**, then this value will be ignored. Each filter represents a condition for processing the data values. The picture below shows an example the filter panel:




1 The method of choosing the conditions by what filtering (Value or Argument) is done.
2 This field specifies the type of data with what condition will be working. Five types of data are available: **String**, **Numeric**, **DateTime**, **Boolean**, **Expression**. The data type affects how the report generator processes the condition. For example, if the data type is a string, then the method of work with strings is used. In addition, depending on the type of data the list of available condition operations is changed. For example, only for the **String** data type the **Containing** operation is available. The **Expression** data type is used to set the expression instead of the second value.
3 The type of operation with what it is possible to calculate a value of a condition. All available types of operations are available in the table below.

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4 Values of the filter condition.

A list of available operations depends on the type of data. Below is a table of operations for each type of data with their descriptions.

| Operation | Types of data | | | | Description |
|---|---|---|---|---|---|
| | String | Numerical | DateTime | Boolean | |
| equal to | ✓ | ✓ | ✓ | ✓ | If the first value is equal to the second, then the condition is true. |
| not equal to | ✓ | ✓ | ✓ | ✓ | If the first value is not equal to the second, then the condition is true. |
| between | | ✓ | ✓ | | If the first value is in the range, then the condition is true. |
| not between | | ✓ | ✓ | | If the first value is not in the range, then the condition is true. |
| greater than | | ✓ | ✓ | | If the first value is greater then the second value, then the condition is true. |
| greater than or equal to | | ✓ | ✓ | | If the first value is greater then the second value of equal to the second value, then the condition is true. |
| less than | | ✓ | ✓ | | If the first value is less then the second value, then the condition is true. |
| less then or equal to | | ✓ | ✓ | | If the first value is less then the second value or equal to the second value, then the condition is true. |

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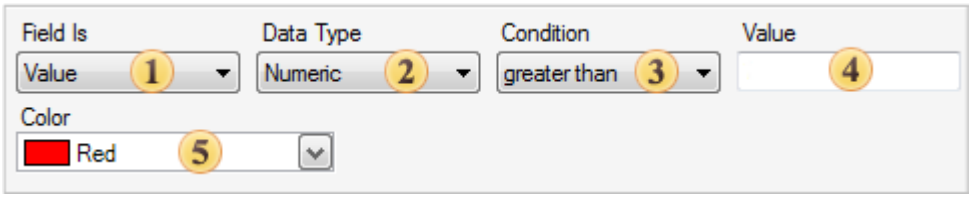
| | | | | | |
|---|---|---|---|---|---|
| containing | ✓ | | | | If the first value contains the second value, then the condition is true. This operation is used only for strings. |
| not containing | ✓ | | | | If the first value does not contain the second value, then the condition is true. This operation is used only for strings. |
| beginning with | ✓ | | | | If the first value starts with the second value, then the condition is true. This operation is used only for strings. |
| ending with | ✓ | | | | If the first value ends with the second value, then the condition is true. This operation is used only for strings. |

### 2.26.5.4. Conditions

If it is necessary to set the color of values in a chart, one can specify the condition. The **Conditions** property in the **Series Editor** is used to set up conditional formatting. The editor of conditions is called using this property. The picture below shows the main elements of the editor of conditions:




**1 Field Is**
This is used to select the type of conditions.
**2 Data Type**
This field specifies the type of data with what a condition will work. There are five types of data: **String**, **Numeric**, **DateTime**, **Boolean**, **Expression**. Data type affects on how the reporting tool processes a condition. For example, if the data type is a string, then the methods of work with strings are used. In addition, depending on the type of data the list of available operations of conditions is changed. For example, only for the **String** data type the **Containing** operation is available**.** The **Expression** data type provides the ability to specify an expression instead of the second value. In this case the reporting tool will not check the compatibility of the first and the second values of the condition. Therefore, the user should care about the correctness of the

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expression.

3 **Condition**

A type of operation using what the calculation of values will be done.

4 **Value**

The first value of a condition.

5 **Color**

Select a color to mark values which corresponds to condition.

### 2.26.5.5. Series Editor

Setting the series includes a number of properties in the **Series Editor**, which is used to visually arrange the rows and change the advanced settings.

1. The **Border Color** property is used to change the border color of each series of a chart, i.e. each border of series has its own color.

2. The **Brush** property is used to change the type of filling and series color.

3. Depending on the value of the **Show Shadow** property, the shadow for series may be shown/ hidden. If the **Show Shadow** property is set to **true**, then shadows are shown. If the **Show Shadow** property is set to **false**, then shadows are not shown.

4. . The **Show Zeros** property can take two values, depending on what zero values in a chart will be shown/hidden. If the **Show Zeros** property is set to **true**, then zero values are displayed on a chart. If the **Show Zeros** property is set to **false**, then zero values will not be displayed on a chart.

5. Using the **Width** property it is possible to change the width of the created values. A value of this property will change a value from 0 (a value greater than 0) to 1 (a value must be less than or equal to 1). The lowest value corresponds to the minimum width and maximum value corresponds to the maximum width.

6. The **Axis Y** property affects the location of the Y axis. If the **Axis Y** property is set to **Left Y Axis**, then the Y axis will be located on the left. If the **Axis Y** property is set to **Right Y Axis**, then the Y axis will be located on the right.

7. Using the **Show in Legend** property will change the display mode in a legend. If the **Show in Legend** property is set to **true**, then series are shown in a legend. If the **Show in Legend** property is set to **false**, then series are not shown in a legend.

8. The **Show Series Labels** property can take three values, according to which titles series will be shown/hidden. If the **Show Series Labels** property is set to **None**, then series labels not displayed. If the **Show Series Labels** property is set to **fromCharts**, then series labels are displayed according to parameters set in the **Series Labels** property of a chart. If the **Show Series Labels** property is set to **fromSeries**, then in the **Series Editor** the **Series Labels** property will appear. This property can be configured by setting the parameters, and Series Labels in a chart will be displayed in accordance with these parameters.

9. With help of the **Title** property it is possible to change the series labels. Any characters entered

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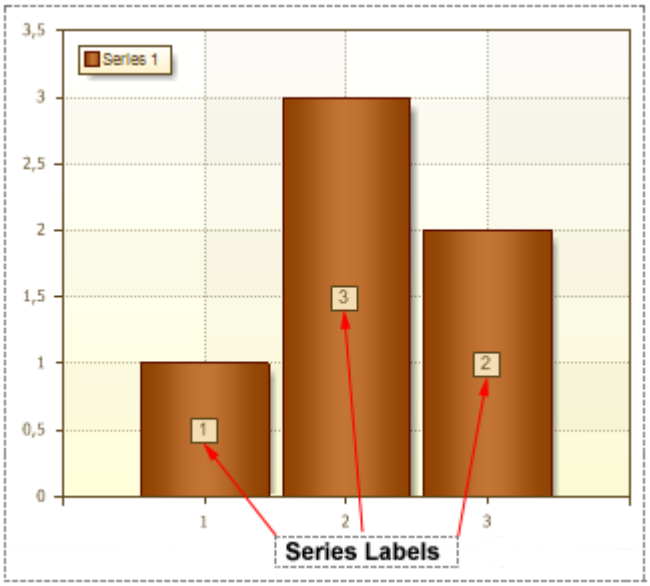
in the field of this property will be labels.

## 2.26.6. Series Labels

**Series Labels** is an information block which displays the value of each series. The picture below shows an example of a chart, with Series Labels:




The **Series Labels** property is used to indicate position of series labels. The list of available options for this property depends on the type of chart. Also, the **Series Labels** property have some options that are used to change settings of Series Labels.

### 2.26.6.1. Series Labels Appearance

The following group of properties allows visually change the appearance of Series Labels: change the background color, titles, borders, font type, antialiasing.

#### 2.26.6.1.1 Brush Property.

The **Brush** property is used to fill a background type and color in Series Labels. To change the background color and appearance of a Series Label use the **Brush** property within the Object Inspector.

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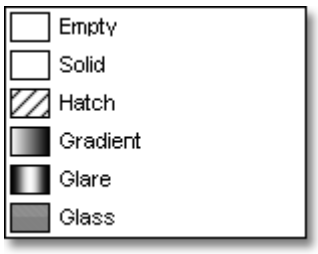
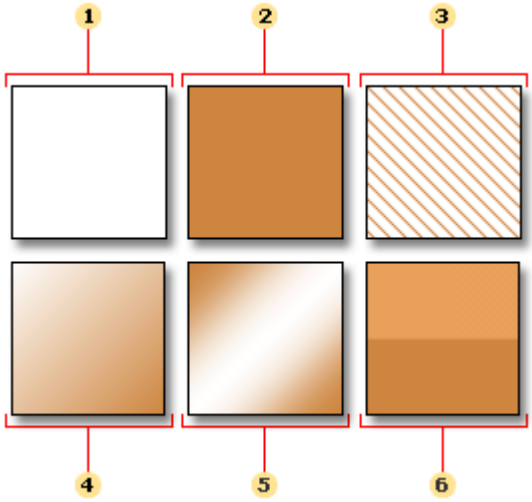



Six types of Brushes are available within Stimulsoft Reports:

- **Empty**
- **Solid**
- **Hatch**
- **Gradient**
- **Glare**
- **Glass**

Below are representations of the results all six Brush types:




| | |
|---|---|
| 1 **Empty** | The background of a Series Label is transparent. |
| 2 **Solid** | The background of a Series Label is filled with the color you specify. |
| 3 **Hatch** | The background of a Series Label is filled with a texture. The background and foreground colors of the selected texture can be specified individually.. |
| 4 **Gradient** | The background of a Series Label is filled with gradient. A Start color, an End color, and a Gradient angle can be specified. |
| 5 **Glare** | The background of a Series Label is filled using the Glare effect. |
| 6 **Glass** | The background of a Series Label is filled using the Glass effect. |

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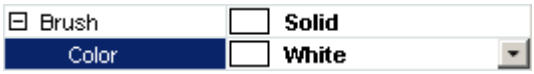
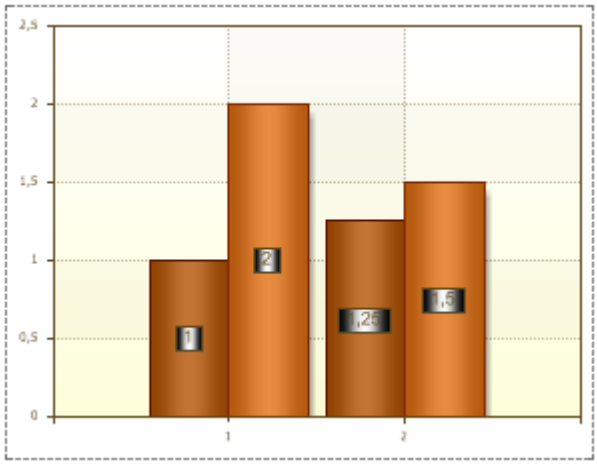
The **Brush.Color** property is used to change the Series Labels color.




The picture below shows a sample of a chart with the Brush property set to **Glare**:




### 2.26.6.1.2 Font Property.

The font for Series Labels can be set using the **Font** property within the Object Inspector.

| Font | Arial; 7pt |
|---|---|
| Font Name | ab Arial |
| Font Size | 7 |
| Font Bold | False |
| Font Italic | False |
| Font Underline | False |
| Font Strikeout | False |

**Selecting font**

Series Labels within a report can be output using different fonts. Three examples fonts are shown below:

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Any font that is installed on your machine can be used in Series Labels. However, when choosing a font try to select one that will also be present on a user machine or a report may not render as you would wish at runtime.

**Font Size**

The font size can be changed using the **Font.Size** property. For example:

**Font Styles**

Different styles can be applied to the font. A font may include one or more styles such as regular, bold, semibold, italic, underlined, and strikeout. Examples of font styles are shown below:

The picture below shows a chart with text set to **Arial, Bold** style**,** font size - **12:**

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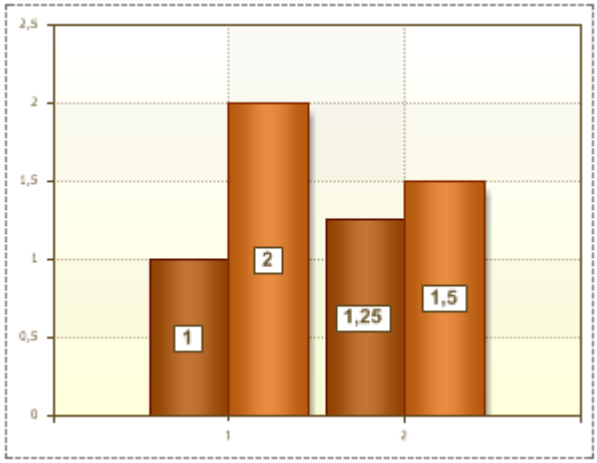
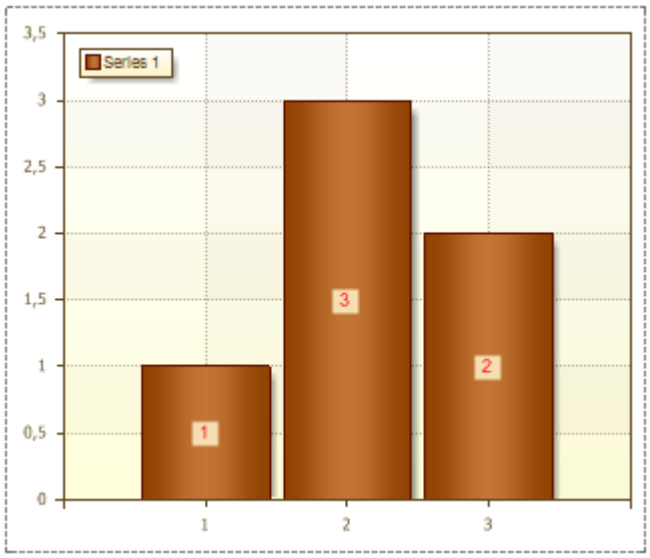



#### 2.26.6.1.3 LabelColor Property.

The **Label Color** property within the Object Inspector is used to change the color of Series Labels.

The picture below shows a chart with the **Label Color** property set to **red**:

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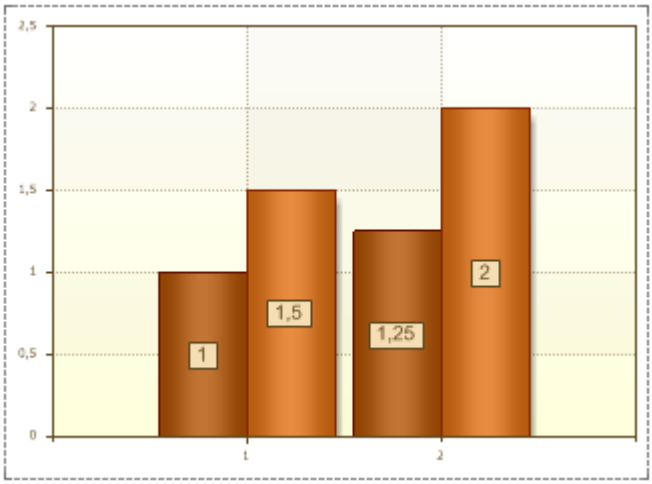
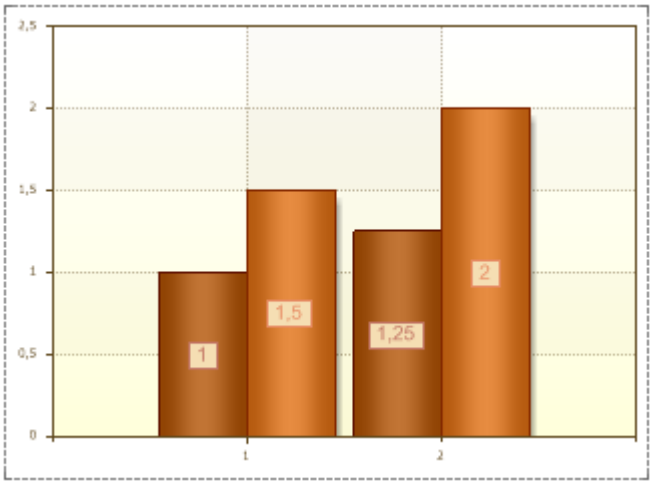
### 2.26.6.1.4 UseSeriesColor Property.

The **Use Series Color** property is used to make the border color and the series label color match to the color of the series. If the **Use Series Color** property is set to **false**, then the border color and the color of series labels will correspond to the selected values of the **Border Color** and **Label Color** properties. The picture below shows an example of a chart, with the **Use Series Color** property set to **false**:




If the **Use Series Color** property is set to **true**, then the border color and series labels color will match to the color of series. The picture below shows an example of a chart, with the **Use Series Color** property set to **true**:

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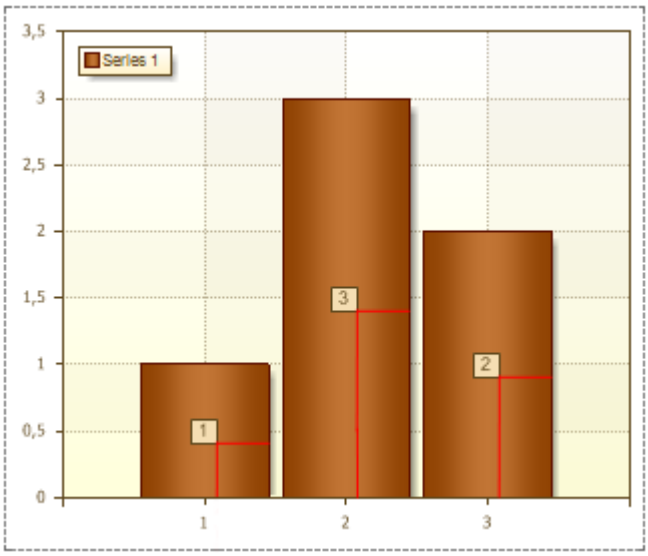
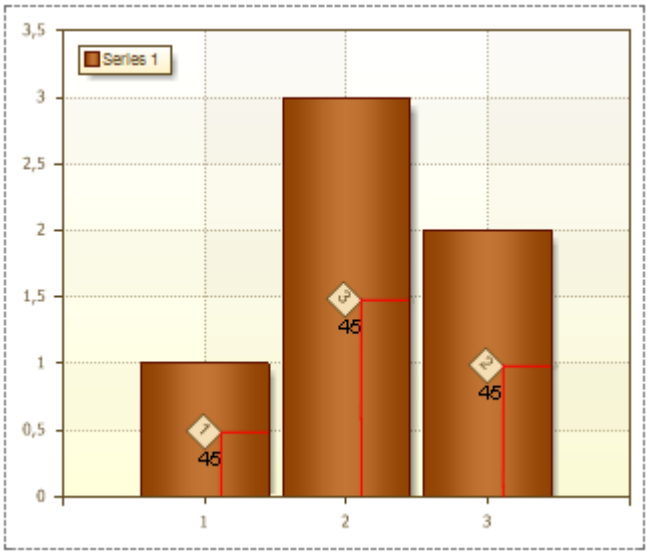
### 2.26.6.1.5 Angle Property.

The **Angle** property allows changing the inclination angle of Series Labels. By default, this property is set to **0** (Series Labels is not inclined). The picture below shows the situation when the **Angle** property is set to **0**:




The value of the property can be negative and positive. If a value of the property is negative then Series Label is inclined anticlockwise. If the value of the property is positive then Label in inclined clockwise. The picture below shows a chart sample, which the **Angle** property for Series Labels is set to **45**:

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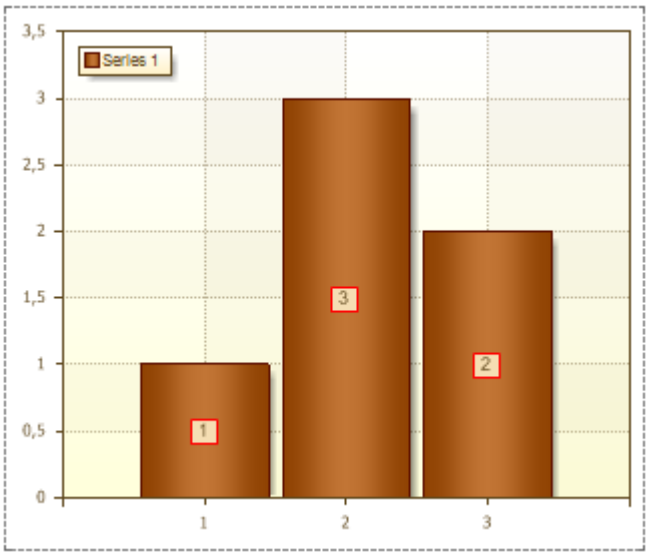
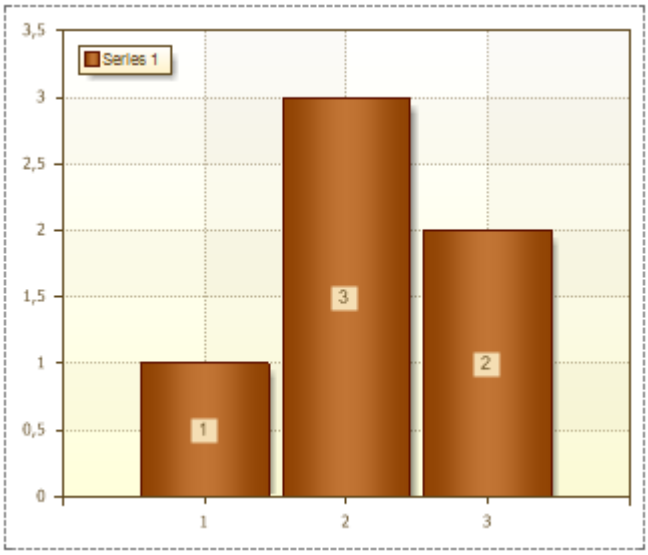
#### 2.26.6.1.6 DrawBorder Property.

The **Draw Border** property allows showing/hiding a border of Series Labels. It has two values: **true** and **false**. If the **Draw Border** is set to **true**, then the border is shown. The picture below shows a chart with borders around Series Labels (the borders are red):




If the **Draw Border** is set to **false**, then the border is hidden. The picture below shows a chart without borders around Series Labels::

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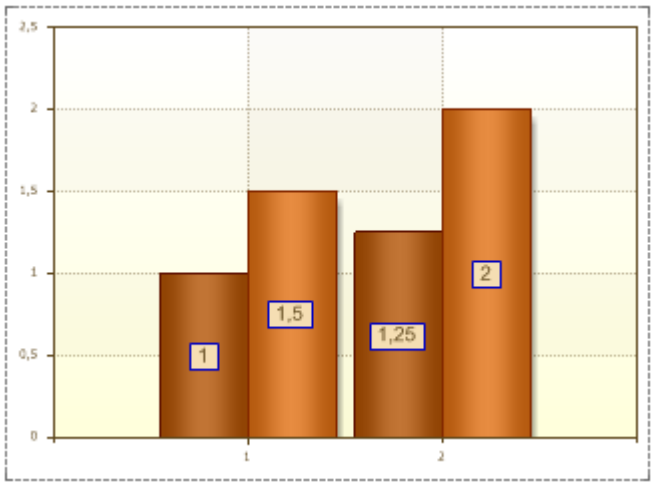
#### 2.26.6.1.7 BorderColor Property.

The **Border Color** property is used to change the border color of Series Labels.

The picture below shows a chart which Series Labels borders are blue:




#### 2.26.6.1.8 Antialiasing Property.

**Antialiasing** property allows you producing smooth-edged Series Labels by partially filling the edge pixels. As a result, the edges of Series Labels blend into the background. The picture below shows a chart with the **Antialiasing** property set to **true**:

The picture below shows a chart with the **Antialiasing** property set to **false**:

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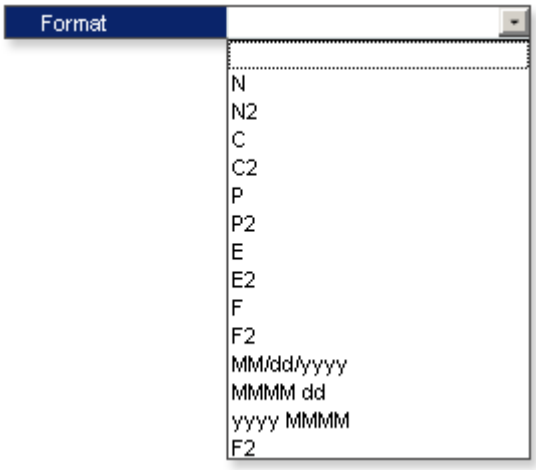
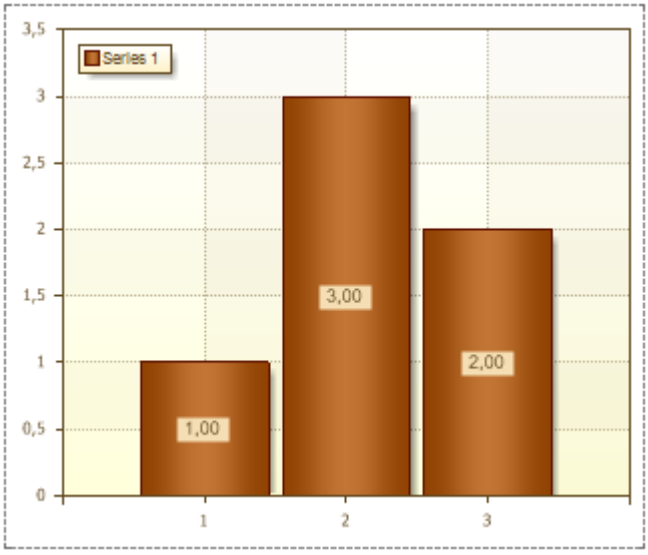
### 2.26.6.2. Format Property

The **Format** property is used to format the contents of Series Labels. This property has multiple values.




1. **Number.** The **N** value of the **Format** property is used for the general display of numbers. When filling the **Format**, after the **N** value, it is possible to specify the number of decimal places that you want to use. If no numbers are specified after **N** then decimal places will be shown only if they are present as a result of calculation. The picture below shows a chart with the **Format** property of Series Labels set to **N**:




2. **Currency.** The **C** value of the **Format** property is used to display Series Labels with a currency symbol. After the **C** value, it is possible to specify the number of decimal places that you want to use. The picture below shows a chart with the **Format** property of Series Labels set to **C**:

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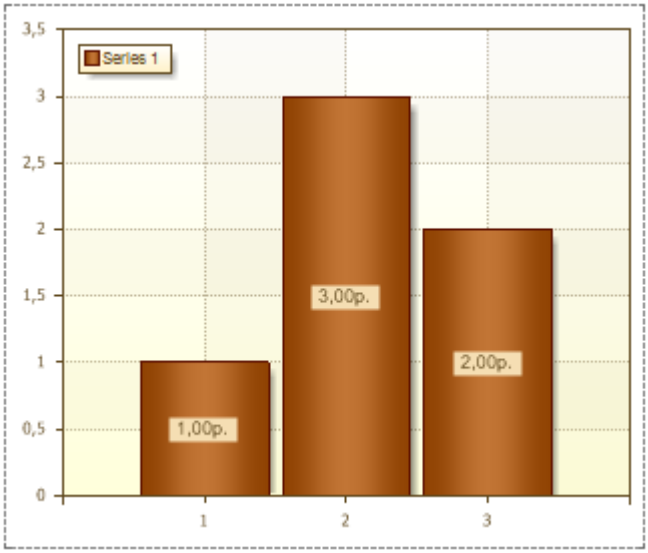
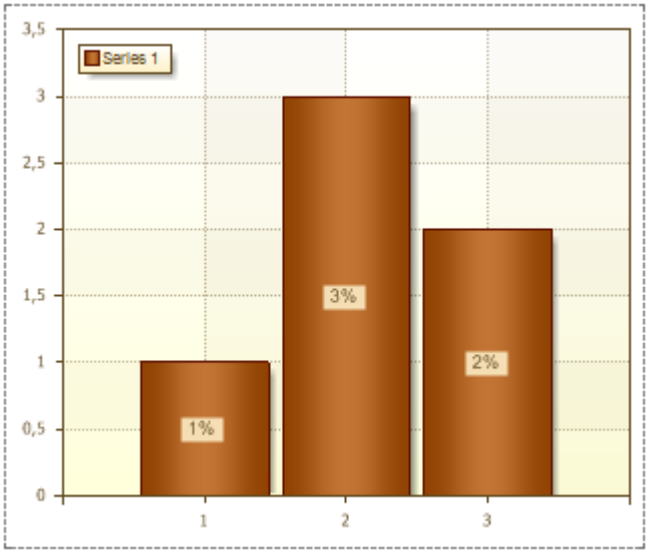



3. **Percentage**. The **P** value of the **Format** property is used to display Series Labels with percent symbol. After the **P** value, it is possible to specify the number of decimal places that you want to use. The picture below shows a chart with the **Format** property of Series Labels set to **P**:




4 **Date**. The **MM/dd/yyyy**, **MMMM dd**, **yyyy MMMM** values of the **Format** property convert values of arguments to date. **MM/dd/yyyy** - the date is shown like "01.20.2010", **MMMM dd** - the date is shown like "September 29", **yyyy MMMM** - the date is shown like "2010 March". The picture below shows a chart and with the **Format** property set to **MM/dd/yyyy**

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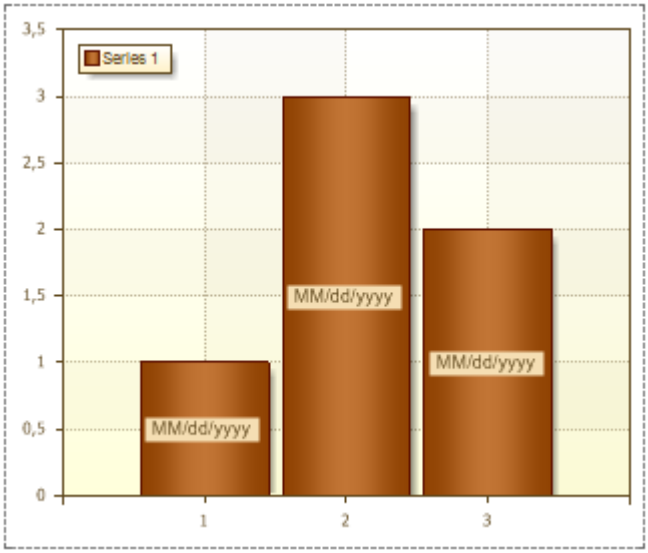
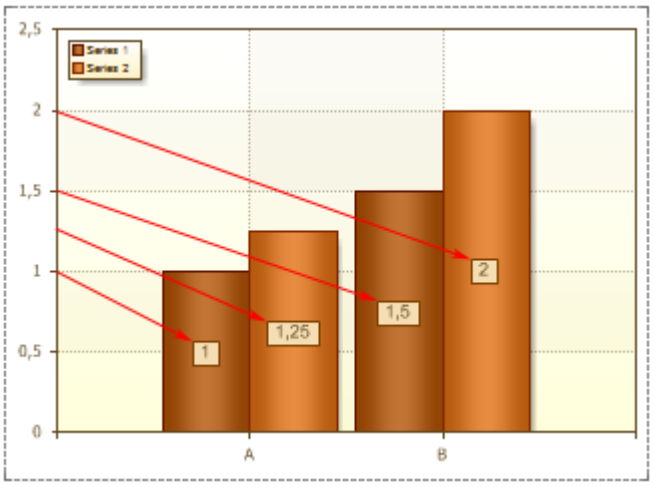



To reset the **Format** property of selected cells, and return to the default format, clear the Format by selecting empty field.

### 2.26.6.3. ValueType Property

The **Value Type** property is used to specify the type of a value that appears in the series labels. This property may take the following values: **Value**, **Series Title**, **Argument**, **Value - Argument**, **Argument - Value**, **Series Title - Value**, **Series Title - Argument**.

1. **Value**. The Series Labels are series values. The picture below shows an example of a chart with the **Value Type** property set to **Value**:




2. **Series Title**. The Series Labels are records in the **Title** field in the **Series Editor**. The picture below shows an example of a chart with the **Value Type** property set to **Series Title**:

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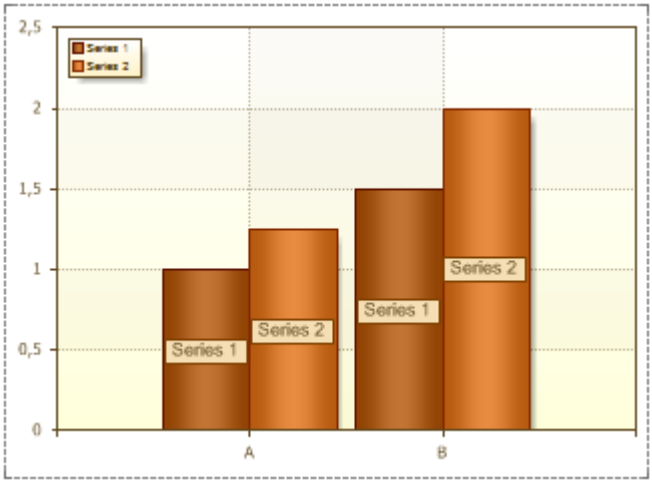
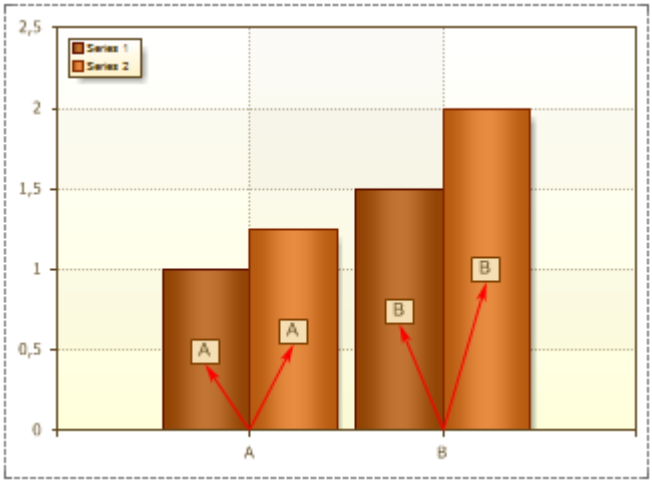



3. **Argument**. The Series Labels are the arguments. The picture below shows an example of a chart with the **Value Type** property set to **Argument**:




4. **Value - Argument**. The Series Labels are **Values** and **Arguments** of series. The picture below shows an example of a chart with the **Value Type** property set to **Value - Argument**:

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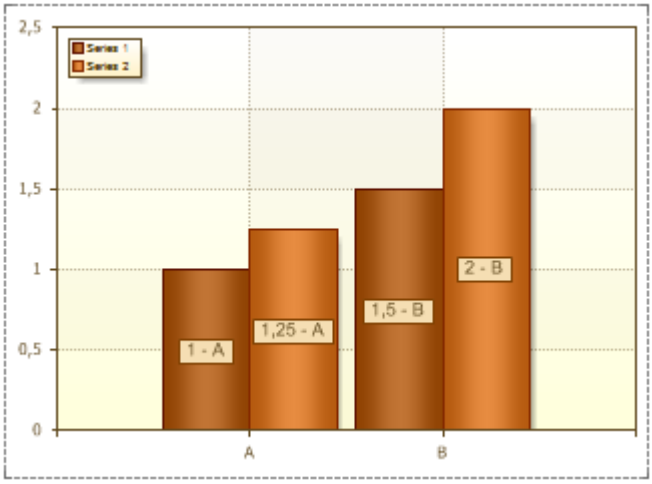
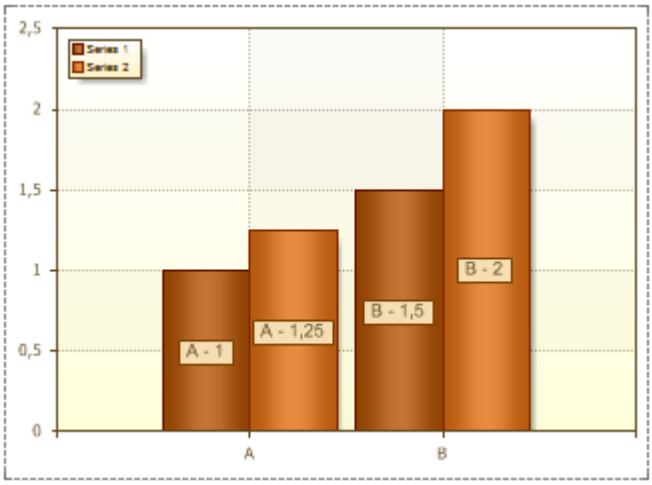



5. **Argument - Value**. The Series Labels are **Arguments** and **Values** of series. The picture below shows an example of a chart with the **Value Type** property set to **Argument - Value**:




6. **Series Title - Value**. The Series Labels are **Series Titles** and **Values**. The picture below shows an example of a chart with the **Value Type** property set to **Series Title - Value**:

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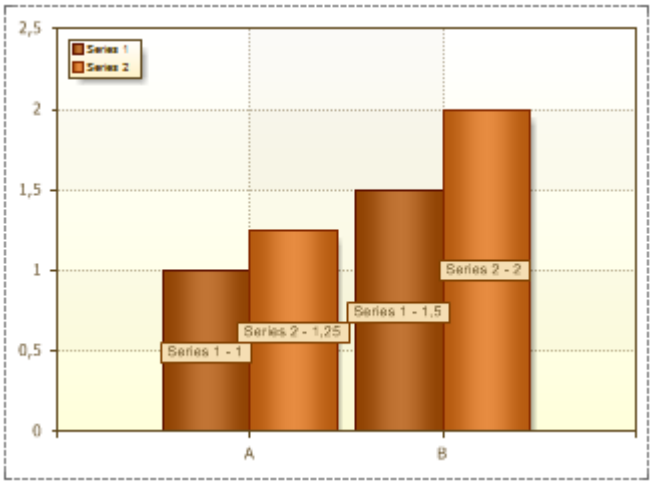
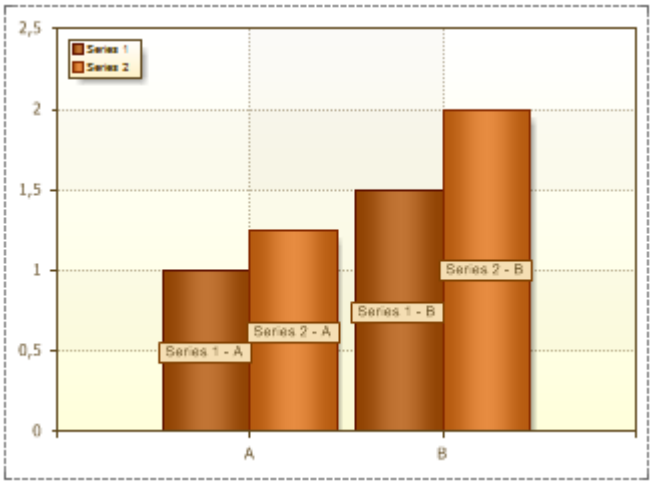



7. **Series Title - Argument**. The Series Labels are **Series Titles** and **Arguments**. The picture below shows an example of a chart with the **Value Type** property set to **Series Title - Argument**:




### 2.26.6.4. ValueType Separator

The **Value Type Separator** property is used to change the type of values separator in the series labels. By default, the **Value Type Separator** property is set to **'-'**. Any character or group of characters typed in the field of the **Value Type Separator** property, will be the delimiter (including the **'space'**). If the field is unfilled, then the separator is a **'space'**.

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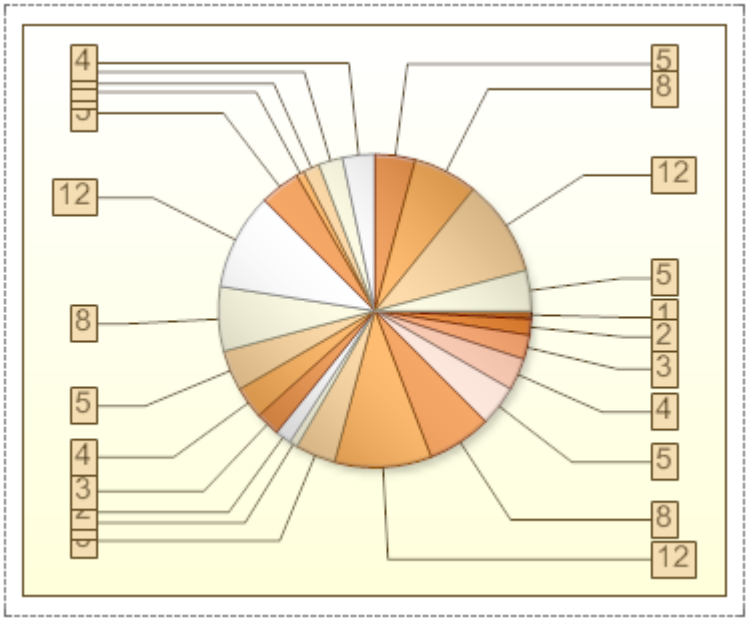
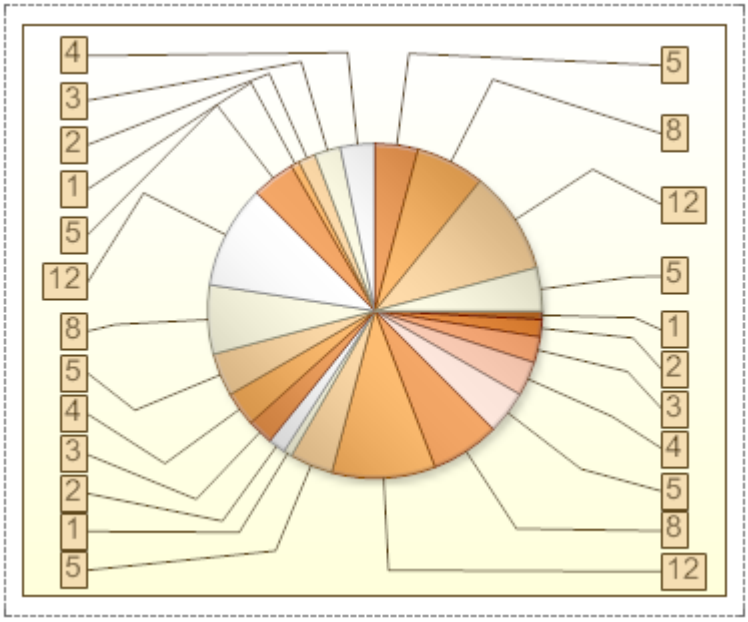
### 2.26.6.5. PreventIntersection Property

The **Prevent Intersection** property is used to avoid overlapping between series labels and with the borders of rendered values and axes. By default, the **Prevent Intersection** property is set to **false** and series labels may overlap, what makes them look bad or unreadable. The picture below shows an example of a chart, with the **Prevent Intersection** property set to **false**:




If the **Prevent Intersection** property is set to **true**, then the series labels will not overlap. The picture below shows an example of a chart, with the **Prevent Intersection** property set to **true**:

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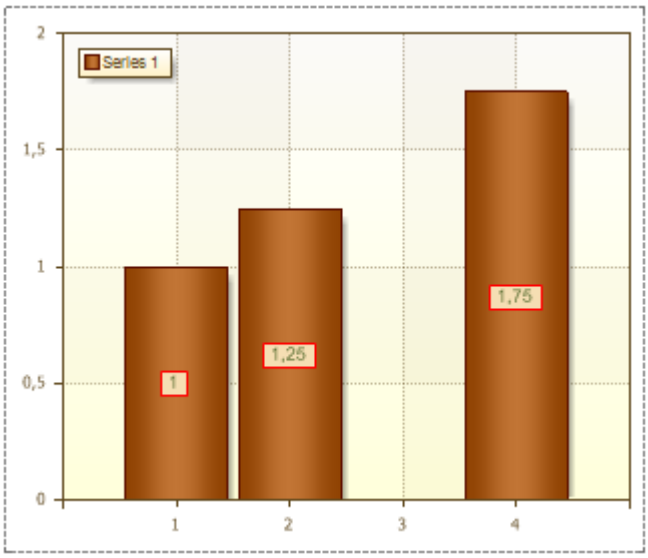
### 2.26.6.6. ShowOnZeroValues Property

Sometimes, when designing charts, 0 values of series can be met. Series labels of zero values can be displayed. The **Show on Zero Values** property is used to show/hide these series labels. If the **Show on Zero Values** property is set to **false**, then series labels of zero values will be hidden. The picture below shows an example of a chart with a zero value and the the **Show on Zero Values** property is set to **false**:




In this chart the 3rd argument is 0, and the series labels is not displayed. If the **Show on Zero Values** property is set to **true**, then series labels of zero values will be shown.The picture below shows an example of a chart with a zero value and the the **Show on Zero Values** property is set to **true**:

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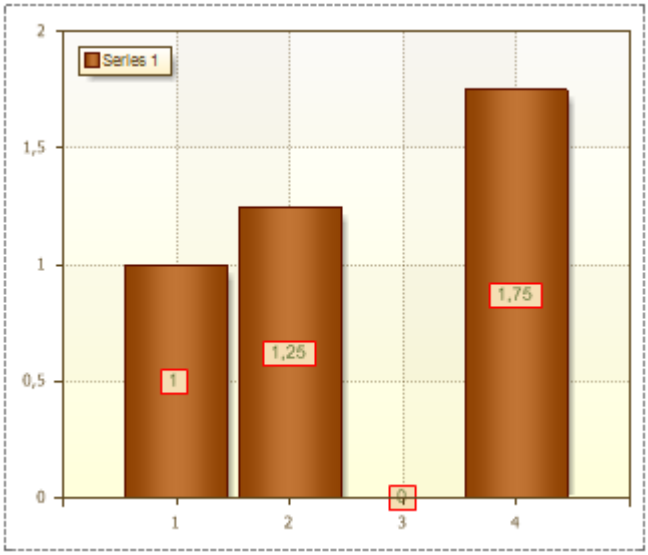
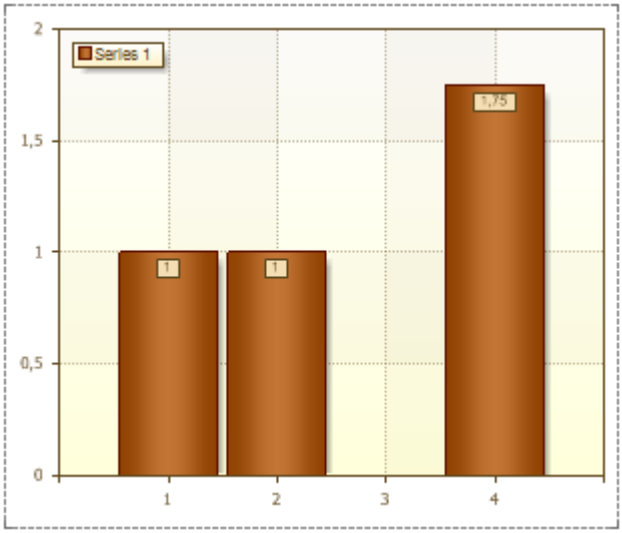



As can be seen from this picture, the 3rd argument is 0, and its title was shown.

### 2.26.6.7. Step Property

The **Step** property allows changing the step through what the Series Labels will be shown. By default, the **Step** property is set to **0**, so Series Labels will be shown on each Series. The picture below shows a chart with the **Step** property of Series Labels set to **0**:




If the **Step** property is set to **2**, then Series Labels will be shown as it is shown on picture below:

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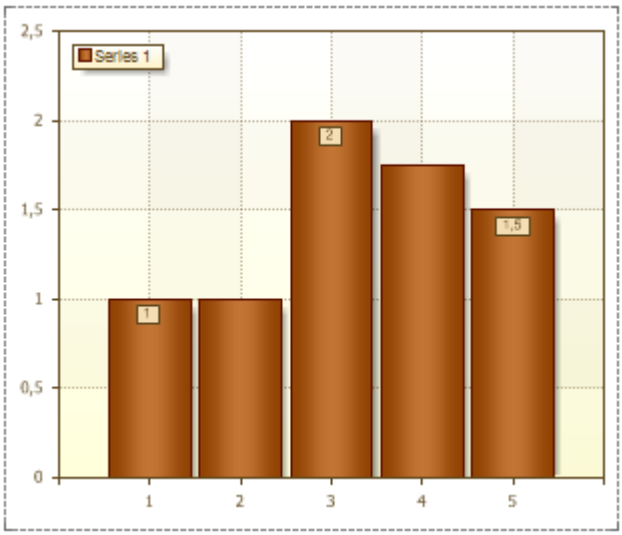
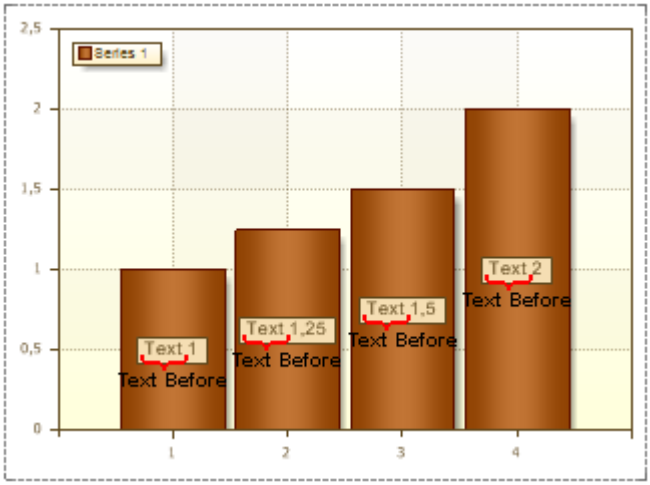



The value **1** of the **Step** property indicates that Series Labels will be shown for each value of Series.

### 2.26.6.8. TextBefore and TextAfter Properties

The **Text before** and **Text after** properties allows showing text before and after Series Labels. It is not necessary to use these properties. The pictures below show chart samples with a text before Series Labels (left) and a text after Series Labels (right):

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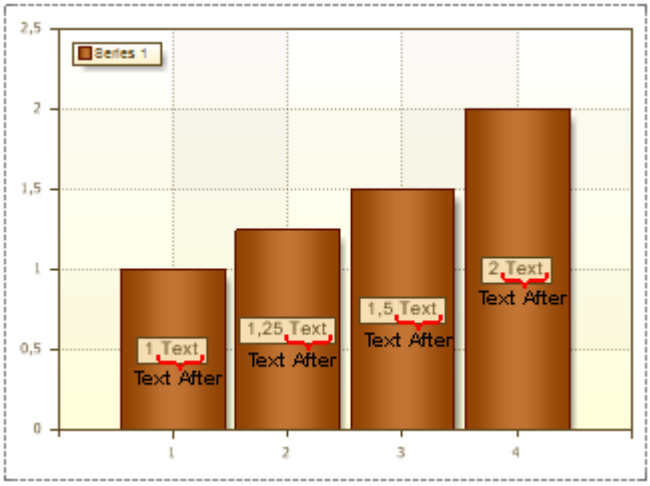
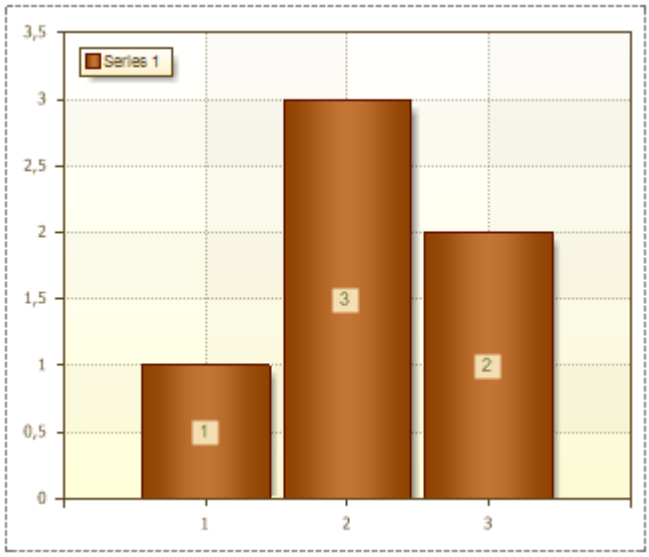



### 2.26.6.9. Visible Property

The **Visible** property is used to show/hide Series Labels, depending on the selected value. If the **Visible** property is set to **true**, then Series Labels are shown. The picture below shows a chart with Series Labels:




If the **Visible** property is set to **false**, then Series Labels are not displayed. The picture below shows a chart with hidden Series Labels:

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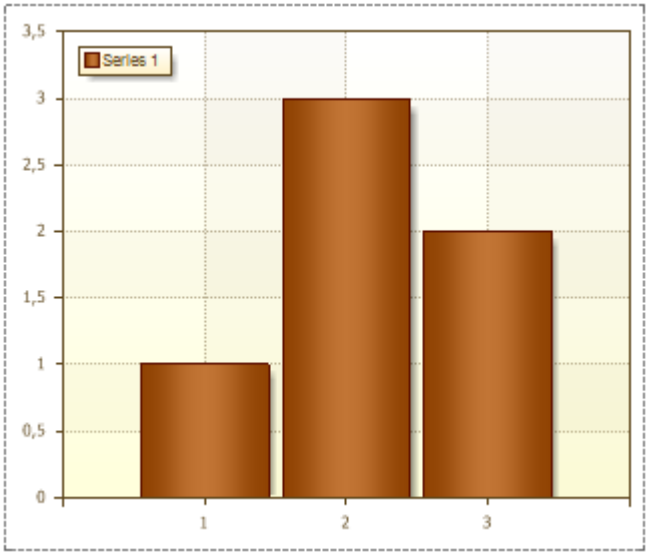


By default, the **Visible** property is set to **true**.

### 2.26.6.10.Marker

**Marker** is an icon that is shown near the Series Labels.

| Marker Size | 8; 6 |
|---|---|
| Height | 6 |
| Width | 8 |
| Marker Visible | True |

It is possible to change height and width of a **Marker**. The **Marker** takes the color of Series. The picture below shows a chart with **Markers**:

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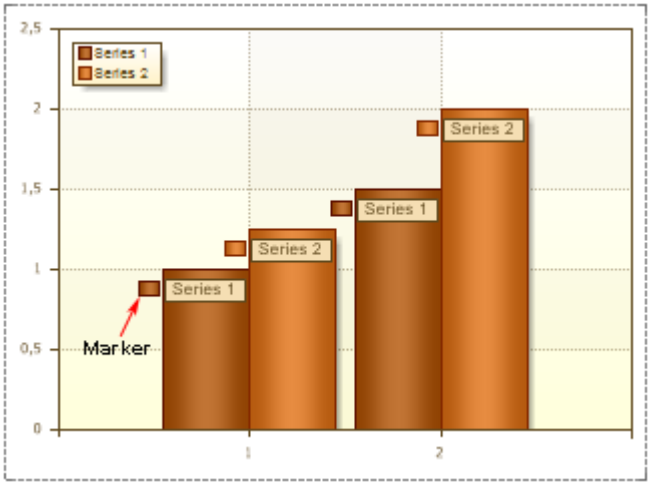
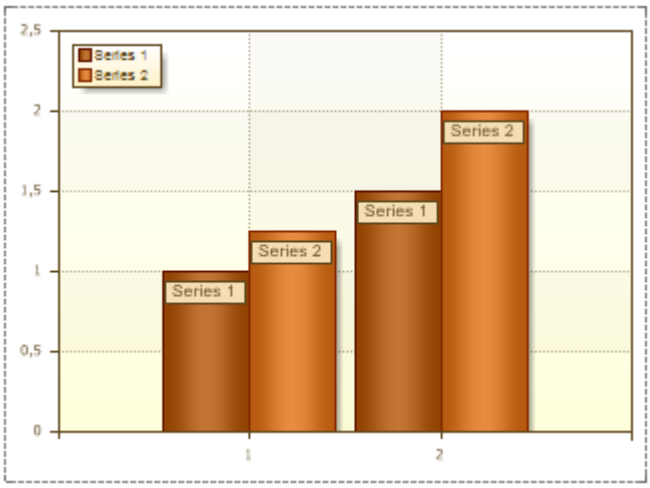



### 2.26.6.10.1 MarkerVisible Property.

If to set the **Marker Visible** property to true then the **Marker** is shown. By default, the **Marker Visible** property is set to **false** and Markers are not visible. The picture below shows a chart with the **Marker Visible** property set to **false**:




The picture below shows a chart with the **Marker Visible** property set to **true**:

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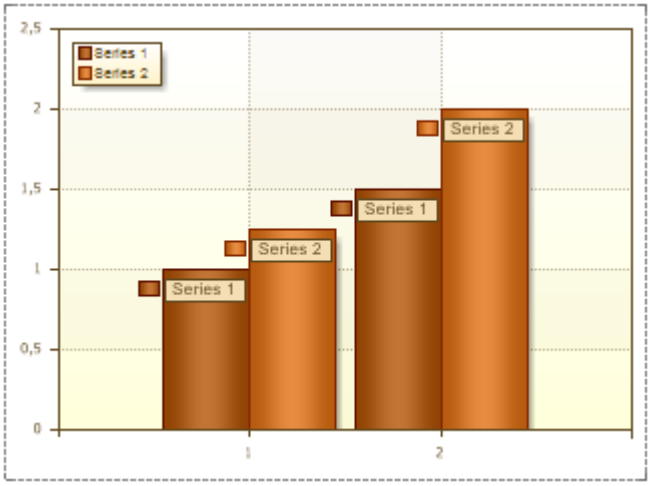


### 2.26.6.10.2 MarkerSize Property.

It is possible to change height and width of a **Marker**. The **Marker Size** property is used for this. It is possible to change **Height** and **Width** of a Marker.

| Marker Size | 8; 6 |
|---|---|
| Height | 6 |
| Width | 8 |
| Marker Visible | True |

Marker Height and Width are set in pixels. If both values are more than **0**, then the Marker is shown.

### 2.26.6.10.3 MarkerAlignment Property.

The **Marker Alignment** property allows aligning a marker on the left or right of Series Labels. If the **Marker Alignment** property is set to **Right**, then the marker is aligned to the left of Series Labels. The picture below shows the Markers aligned left:

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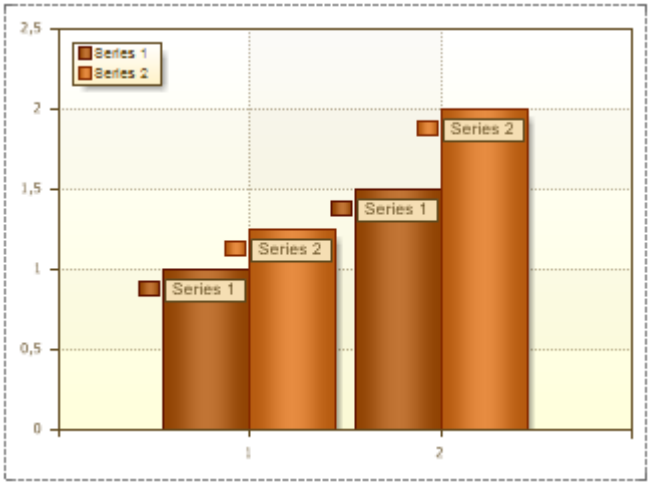
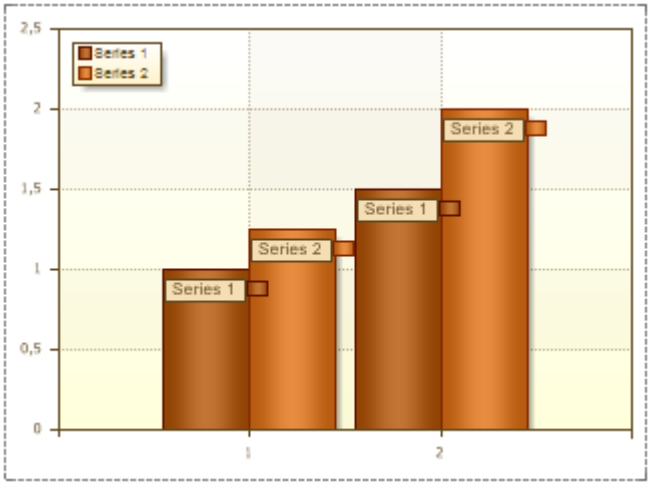



If the **Marker Alignment** property is set to **Right**, then the marker is aligned to the right of Series Labels. The picture below shows the Markers aligned right:




By default, the **Marker Alignment** property is set to **Left**.

## 2.26.7. Style

A style is a combination of various design attributes which can be applied to charts. The **Style** property is used to change the appearance of charts. The value of this property will be one of the chosen style diagrams.

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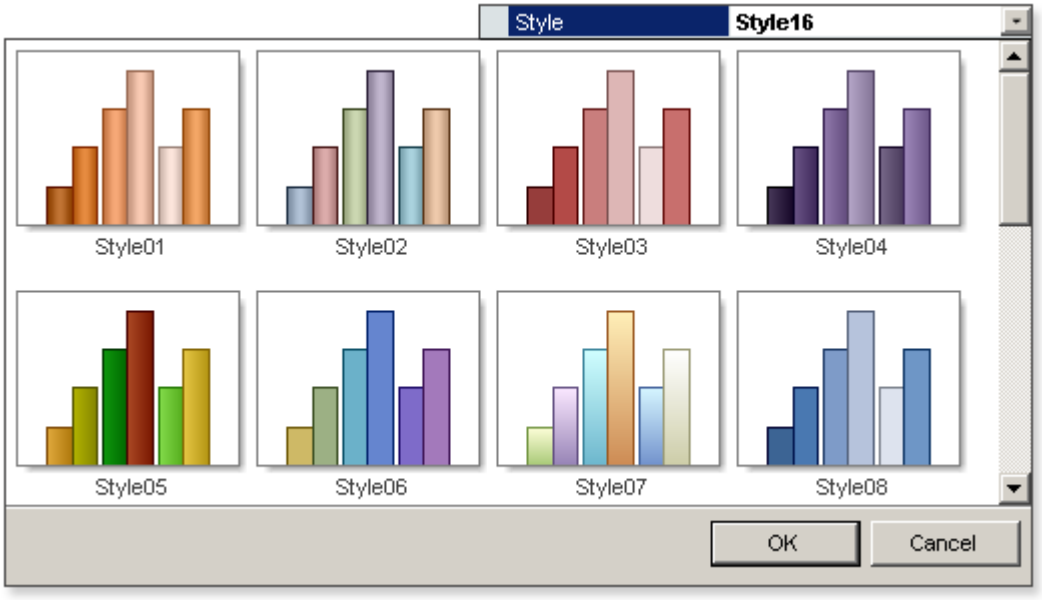
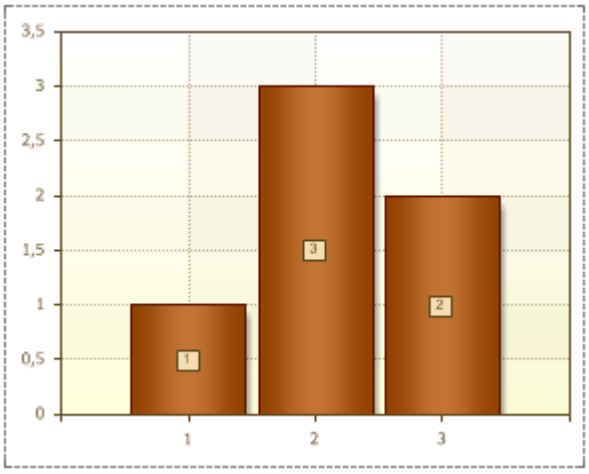



Adding custom styles to the list of the chart styles can be done using the **Style Designer**. Also, it is possible to apply a style to each series. When working with chart styles, it is necessary to take into account the value of the **AllowApplyStyle** property. The picture below shows an example of two charts with different styles:

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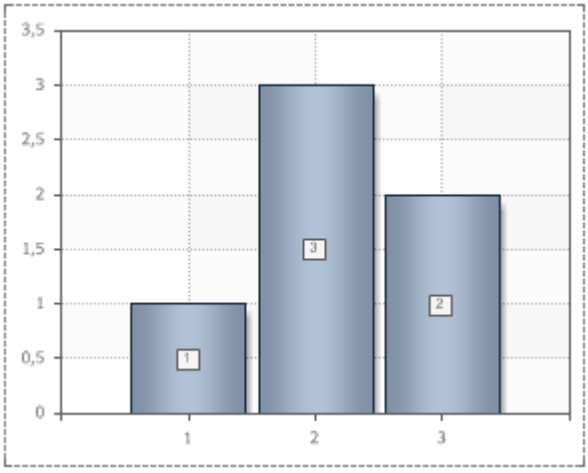


### 2.26.7.1. AllowApplyStyle Property

The **AllowApplyStyle** property is used for whether to apply a selected style in the field of the **Style** property. If the **AllowApplyStyle** property is set to **true**, then the report generator, when rendering, will take into account the value of the **Style** property. If the **AllowApplyStyle** property is set to **false** , then the report generator, when rendering, will take into account the values of appearance of series.

## 2.27. Report Inheritance

There are two ways of report inheritance:
1. Creation of the basic class of a report;
2. Creation of the master-report.

In both ways you should create a basic report in the designer that includes all necessary elements. You may add the following components to the basic reports:

- Pages;
- Components;
- Data sources;
- Variables;
- Connections.

After the report has been created you may either save the report as a special basic class (for this you should use the Save as command) or save the report as a regular report and then use it as a master report.
In the first case, you will get the C# or VB.Net class, and will be able to create new reports. For example:

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```
Reports.Report master = new Reports.Report();
master.RegData(dataSet);
master.Design();
```

In order to use the basic report when creating a new report in the designer, you need to add the following string of a code:

```
StiReport.ReportType = typeof(Reports.Report);
```

Then all new reports will be automatically inherited from the basic class.
In the second way you need to use the following code:

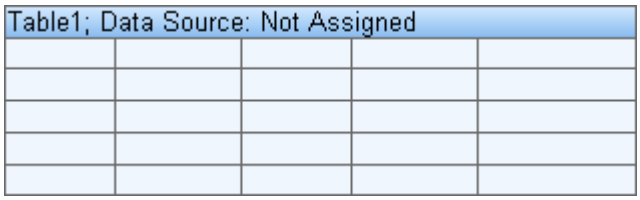
```
StiReport masterReport = new StiReport();
masterReport.Load("d:\\master-detail.mrt");

StiReport report = new StiReport();
report.RegData(dataSet);

report.MasterReport = masterReport.SaveToString();
report.Design();
```

## 2.28. Table

The **Table** component is used to output data in a report. This component is similar to spreadsheets. The table consist of rows and columns in what data can be placed. See on a picture below a Table component with 5 columns and 5 rows.




### 2.28.1. Columns

The **ColumnCount** property of the Table component is used to define the number of columns in a table. On the picture below the table with 3 columns is shown.

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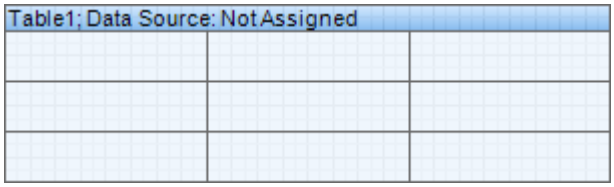
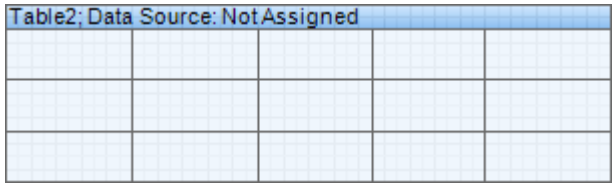
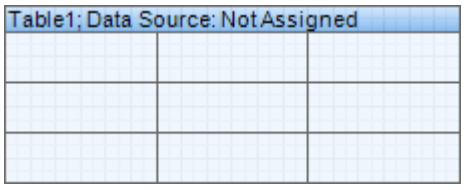



On the picture below the table with 5 columns is shown.

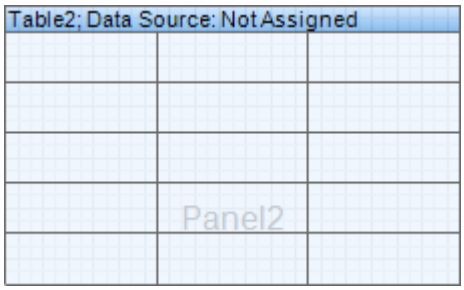



## 2.28.2. Rows

The **RowCount** property of the Table component is used to define the number of rows in a table. On the picture below the table with 3 rows is shown.

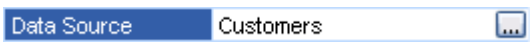



On the picture below the table with 5 rows is shown.




## 2.28.3. Data Source

It is necessary to define the data source to output data in the **Table** component. The reporting tool should know how many times do cells must be printed in a table. Therefore, the **Table** component should have the reference to the data source. There are several ways how to do this. You may use the Table editor. Double click on the Table header to call the editor. Also the Table editor can be called using the **DataSource** property of a Table.

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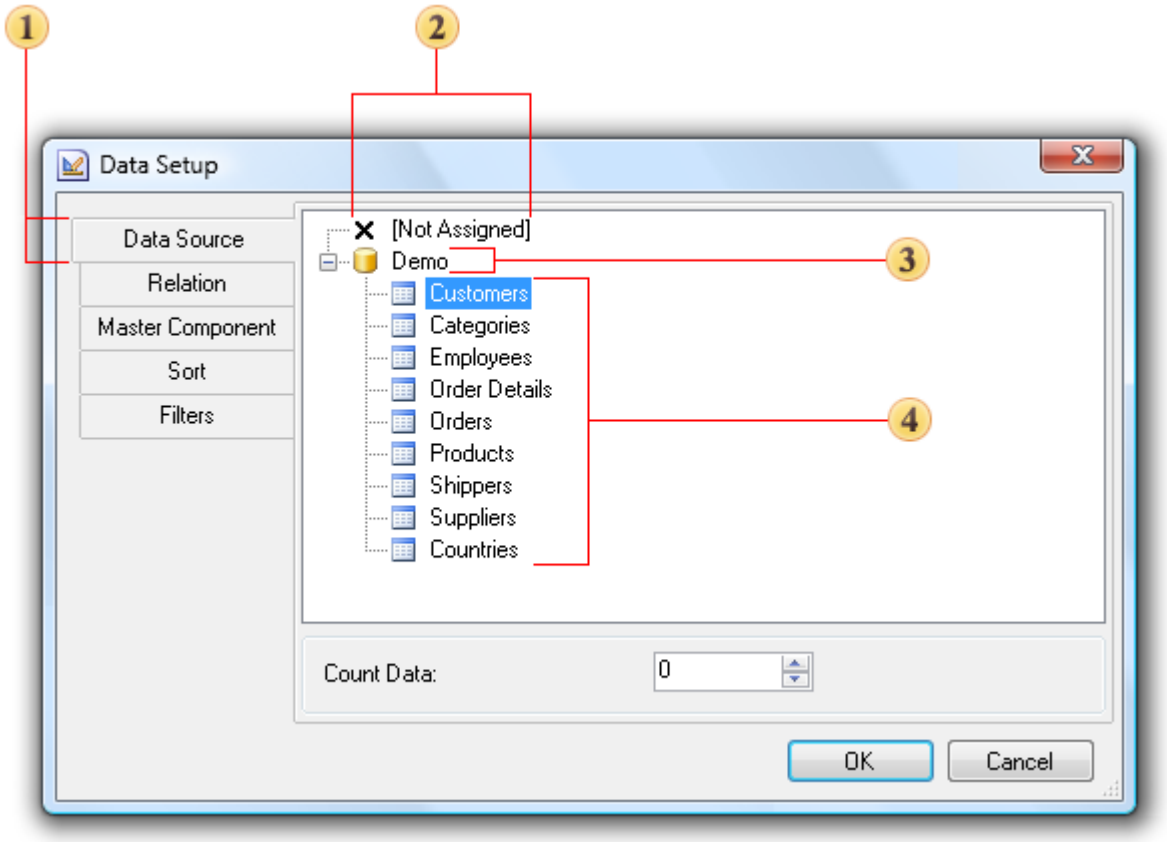
The Table editor allows selecting data source.
A data source can be selected by clicking the first tab of the editor. All data sources are grouped in categories. Each category corresponds to one connection with data in the report data dictionary. The picture below shows the Table editor.




1 The tab to select the data source;
2 Select this node if you do not need to specify the data source;
3 The "Demo" data category;
4 The "Demo" data source category.

The data source can be also selected using the quick access buttons.

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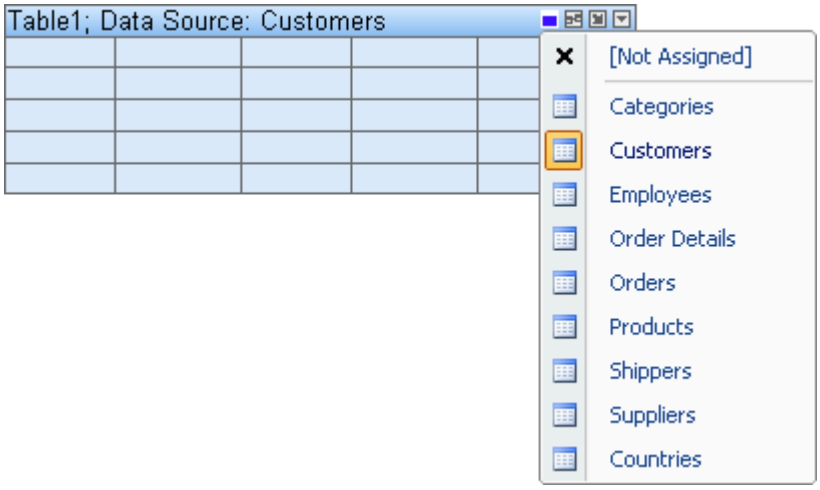
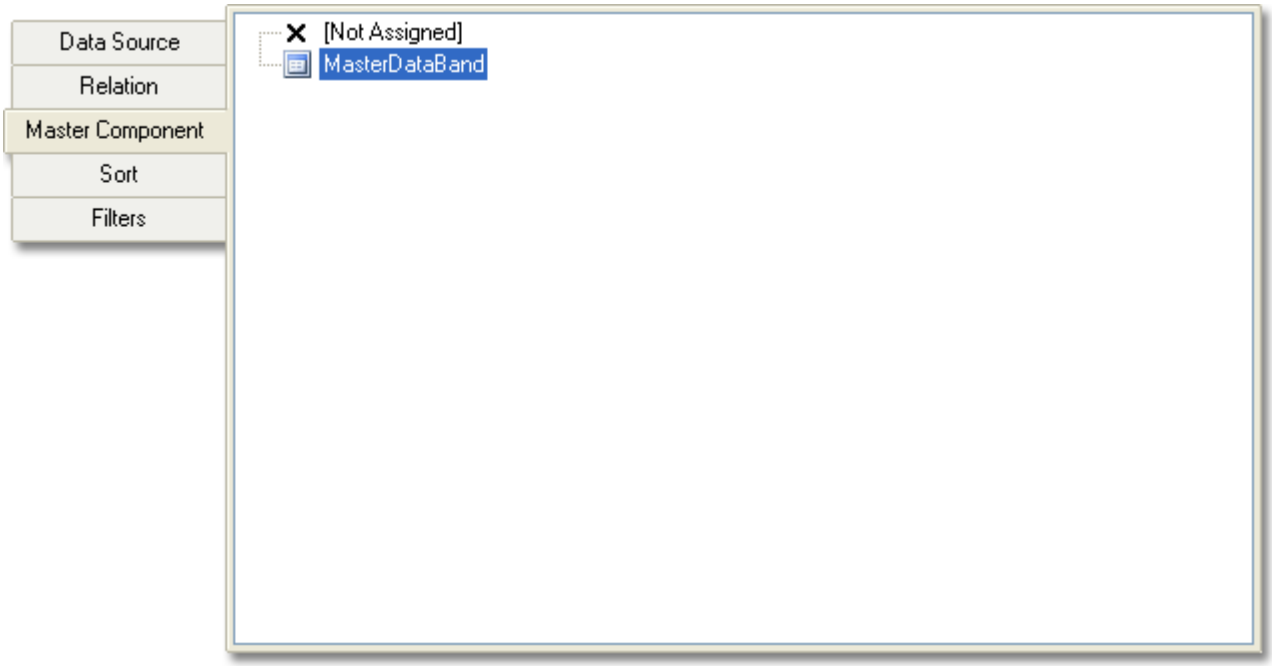



## 2.28.4. MasterComponent Property

It is necessary to put two tables on a page for creating the Master-Detail using the Table component. Specify Master data source for the first table (this table is the Master table). Specify Detail data source to the second table (this table is the Detail table). Then you should bind these two tables using the **MasterComponent** property of a second table. There are several ways to set the Master table. The first way - you may set the Master table in the property grid.

The second way is to set the Master table in the Table designer.

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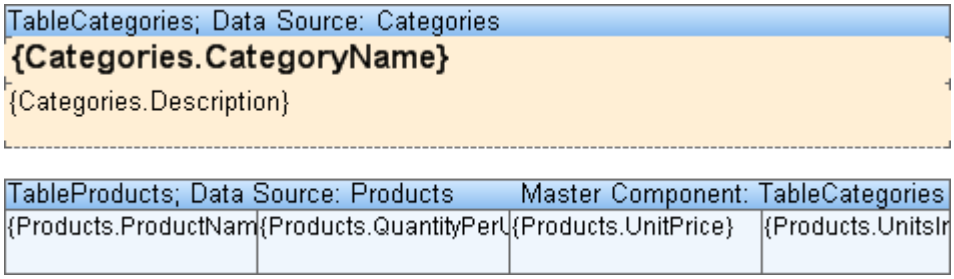
After filling the **MasterComponent** component two tables will be related to each other. When printing one data row from the Master data source (and, correspondingly, printing the Master table), the printing of appropriate rows from the Detail data source occurs (and, correspondingly, printing the Detail table). The Detail band will not be printed separately, only in relation to the Master band. On a picture below two related tables are represented.



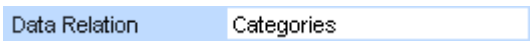

The picture below shows the result of two tables rendering.

**Beverages**
Soft drinks, coffees, teas, beers, and ales

| | | | |
|---|---|---|---|
| Chai | 10 boxes x 20 bags | 18 | 39 |
| Chang | 24 - 12 oz bottles | 19 | 17 |
| Guaraná Fantástica | 12 - 355 ml cans | 4,5 | 20 |
| Sasquatch Ale | 24 - 12 oz bottles | 14 | 111 |
| Steeleye Stout | 24 - 12 oz bottles | 18 | 20 |
| Côte de Blaye | 12 - 75 cl bottles | 263,5 | 17 |
| Chartreuse verte | 750 cc per bottle | 18 | 69 |
| Ipoh Coffee | 16 - 500 g tins | 46 | 17 |
| Laughing Lumberjack | 24 - 12 oz bottles | 14 | 52 |

## 2.28.5. Relation Property

Besides filling the **MasterComponent** property it is necessary to fill the **DataRelation** property of the Detail table. The relation is used for selecting the detailed data only for the specific row of the Master table. If the relation will not be specified then all records of the Detail data source of the Detail table will be output for each row of the Master data source of the Master table.

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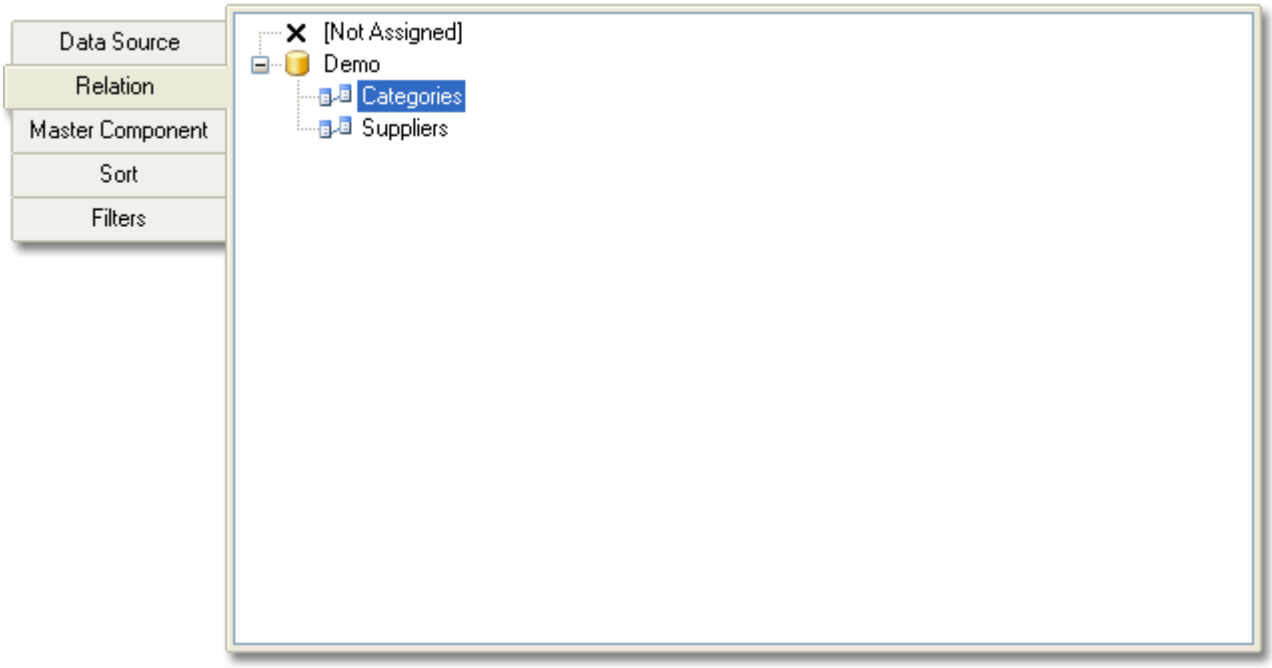
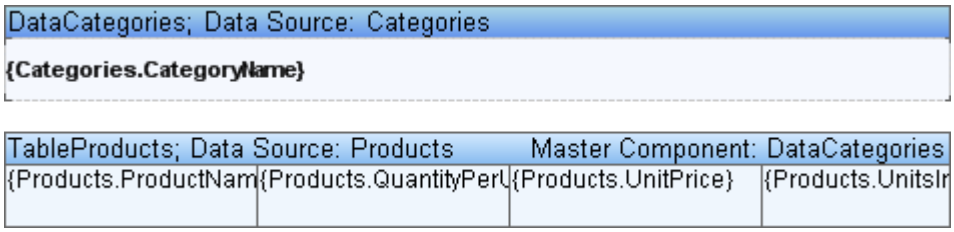
The relation can be selected using the **Data** table editor.




The selection is done between relations which are created between Master and Detail data sources and in what the Detail data source is the child data source.

## 2.28.6. Tables and Bands in Master-Detail Lists

It is allowed binding bands and tables when rendering the Master-Detail reports. For example, the master component can be a band and the Detail component can be a table. The template of such a report is shown on a picture below.




The number of **Data** bands and **Tables** which interacts between each other is unlimited.

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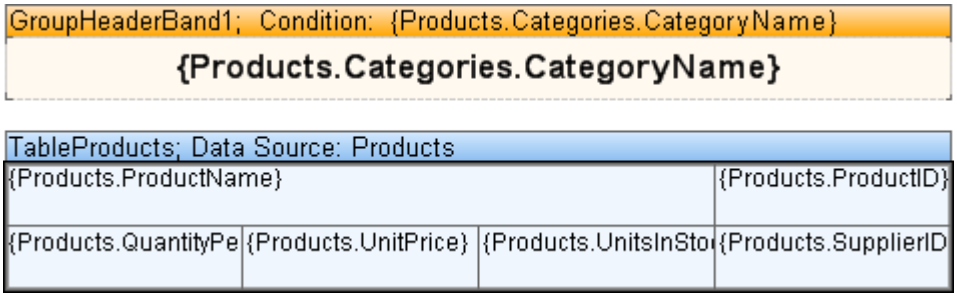
## 2.28.7. Tables and Grouping

It is easy to add grouping to a report with a table. For this you should put the GroupHeader band before the Table component and the GroupFooter band after the Table. The condition of grouping is specified for the GroupHeader component. The text component that outputs the condition of grouping is placed in the GroupHeader band. It is enough to group a table by the specified condition. On a picture below the table of grouping is shown.




See the picture below that demonstrates the report with grouping and a table.

**Beverages**

| | | | |
|---|---|---|---|
| Côte de Blaye | | | 38 |
| 12 - 75 cl bottles | 263,5 | 17 | 18 |
| Chartreuse verte | | | 39 |
| 750 cc per bottle | 18 | 69 | 18 |
| Steeleye Stout | | | 35 |
| 24 - 12 oz bottles | 18 | 20 | 16 |
| Guaraná Fantástica | | | 24 |
| 12 - 355 ml cans | 4,5 | 20 | 10 |

## 2.28.8. Table Header

Rows in a Table component can be specified as a header. In other words these rows will always be output in the beginning of a table. The **HeaderRowsCount** property is used to indicate how many rows will shown as headers. By default this property is set to 0. The number of header rows cannot be more than the number of rows in a table.

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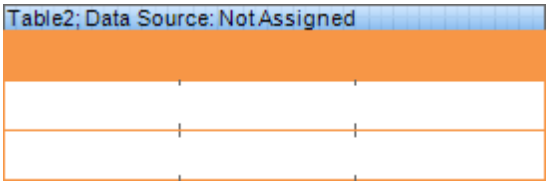
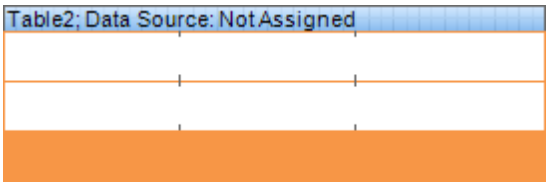



## 2.28.9. Table Footer

A table may include footer rows. These rows are output on the bottom of a table. The **FooterRowsCount** property is used to indicate how many rows will be used as footers. By default this property is set to 0. The number of footer rows cannot be more than the number of rows in a table.




## 2.28.10. Cells Width Autochange

When report rendering using the **Table** component, width of some cells can be changed. As a result this may lead to the change of a table size. There are two properties of Table component which are used to adjust cells size: the **AutoWidthType** property and the **AutoWidth** property.

### 2.28.10.1. AutoWidth Property

The **AutoWidth** property of a **Table** component indicates whether the reporting tool will fix the cells size after the report rendering.

1. The **AutoWidth** property is set to **None**. Column size is not changed. In this case setting the **AutoWidthType** property of a table and the **FixedWidth** property of cells will not affect on a table.
2. The **AutoWidth** property is set to **Page**. If a rendered table is placed on several pages then columns will have different width on different pages. It depends on data.
3. The **AutoWidth** property is set to **Report**. If a rendered table is placed on several pages then columns will have the same width in a report.

### 2.28.10.2. AutoWidthType Property

The **AutoWidthType** property of a table indicates how the reporting tool will fix cells width after report rendering.

**1. None**
Columns width is set depending on the cells contents of all table (the longest line by column is

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taken). If the **FixedWidth** property is set to true, then the column size is not changed.

| | | | |
|---|---|---|---|
| Franchi S.p.A. | Via Monte Bianco 34 | 011-4988260 | Sales Representative |
| Furia Bacalhau e Frutos do Mar | Jardim das rosas n. 32 | (1) 354-2534 | Sales Manager |
| Galería del gastrónomo | Rambla de Cataluña, 23 | (93) 203 4560 | Marketing Manager |
| Godos Cocina Típica | C/ Romero, 33 | (95) 555 82 82 | Sales Manager |

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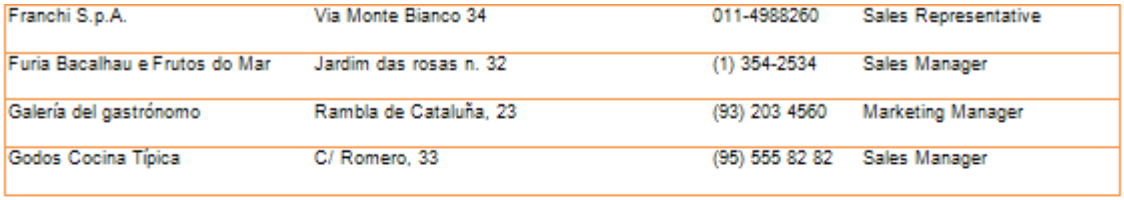
| CompanyName | Address | Phone | ContactTitle |
|---|---|---|---|
| Gourmet Lanchonetes | Av. Brasil, 442 | (11) 555-9482 | Sales Associate |
| Great Lakes Food Market | 2732 Baker Blvd. | (503) 555-7555 | Marketing Manager |
| GROSELLA-Restaurante | 5ª Ave. Los Palos Grandes | (2) 283-2951 | Owner |

**2. FullTable**

Column width is set depending on the table width. In other words the width of all column cells is checked first (the column width is set by the longest line). If there is free space then it is equally distributed between all columns. If there is no enough space to output the longest lines, then the width of columns is decreased in equal parts between all columns.



| | | | |
|---|---|---|---|
| Franchi S.p.A. | Via Monte Bianco 34 | 011-4988260 | Sales Representative |
| Furia Bacalhau e Frutos do Mar | Jardim das rosas n. 32 | (1) 354-2534 | Sales Manager |
| Galería del gastrónomo | Rambla de Cataluña, 23 | (93) 203 4560 | Marketing Manager |
| Godos Cocina Típica | C/ Romero, 33 | (95) 555 82 82 | Sales Manager |

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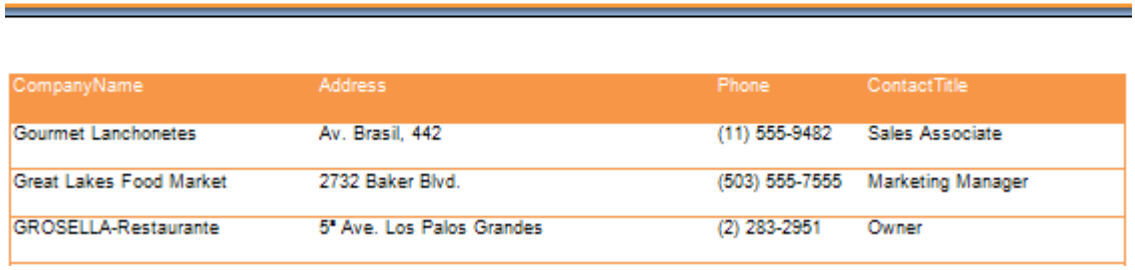

| CompanyName | Address | Phone | ContactTitle |
|---|---|---|---|
| Gourmet Lanchonetes | Av. Brasil, 442 | (11) 555-9482 | Sales Associate |
| Great Lakes Food Market | 2732 Baker Blvd. | (503) 555-7555 | Marketing Manager |
| GROSELLA-Restaurante | 5ª Ave. Los Palos Grandes | (2) 283-2951 | Owner |

**3. LastColumns**

Column width is set depending on the table width. In other words the width of all column cells is checked first (the column width is set by the longest line). If there is free space then it is distributed to the last column which **FixedWidth** property is set to **false**. If there is no enough space to output the longest lines, then the width of the last columns is decreased and distributed between all

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columns which **FixedWidth** properties are set to **false**.

| | | | |
|---|---|---|---|
| La corne d'abondance | 67, avenue de l'Europe | 30.59.84.10 | Sales Representative |
| La maison d'Asie | 1 rue Alsace-Lorraine | 61.77.61.10 | Sales Manager |
| Laughing Bacchus Wine Cellars | 1900 Oak St. | (604) 555-3392 | Marketing Assistant |
| Lazy K Kountry Store | 12 Orchestra Terrace | (509) 555-7969 | Marketing Manager |

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| CompanyName | Address | Phone | ContactTitle |
|---|---|---|---|
| Lehmanns Marktstand | Magazinweg 7 | 069-0245984 | Sales Representative |
| Let's Stop N Shop | 87 Polk St. Suite 5 | (415) 555-5938 | Owner |
| LILA-Supermercado | Carrera 52 con Ave. Bolívar #65-98 Llano Largo | (9) 331-6954 | Accounting Manager |

## 2.28.11. FixedWidth Property

The **FixedWidth** property is used together with the **AutoWidth** property of a **Table** component. If a table changes the column size (depending on the **AutoWidth** property) then the **FixedWidth** property that is set to **true** does not allow these changes. On a pictures below samples of using these property is shown. On the first picture the **FixedWidth** property is not used.

| Company | Address | Phone | Contact |
|---|---|---|---|
| Alfreds Futterkiste | Obere Str. 57 | 030-0074321 | Sales Representative |
| Ana Trujillo Emparedados y helados | Avda. de la Constitución 2222 | (5) 555-4729 | Owner |
| Antonio Moreno Taquería | Mataderos 2312 | (5) 555-3932 | Owner |
| Around the Horn | 120 Hanover Sq. | (171) 555-7788 | Sales Representative |
| Berglunds snabbköp | Berguvsvägen 8 | 0921-12 34 65 | Order Administrator |
| Blauer See Delikatessen | Forsterstr. 57 | 0621-08460 | Sales Representative |
| Blondesddsl père et fils | 24, place Kléber | 88.60.15.31 | Marketing Manager |

On the second picture the **FixedWidth** property of the Phone column is set to **true**.

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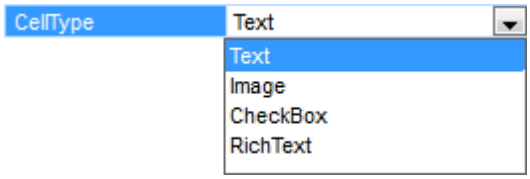
| Company | Address | Phone | Contact |
|---|---|---|---|
| Alfreds Futterkiste | Obere Str. 57 | 030-0074321 | Sales Representative |
| Ana Trujillo Emparedados y helados | Avda. de la Constitución 2222 | (5) 555-4729 | Owner |
| Antonio Moreno Taquería | Mataderos 2312 | (5) 555-3932 | Owner |
| Around the Horn | 120 Hanover Sq. | (171) 555-77 | Sales Representative |
| Berglunds snabbköp | Berguvsvägen 8 | 0921-12 34 6 | Order Administrator |
| Blauer See Delikatessen | Forsterstr. 57 | 0621-08460 | Sales Representative |
| Blondesddsl père et fils | 24, place Kléber | 88.60.15.31 | Marketing Manager |

## 2.28.12. CellType Property

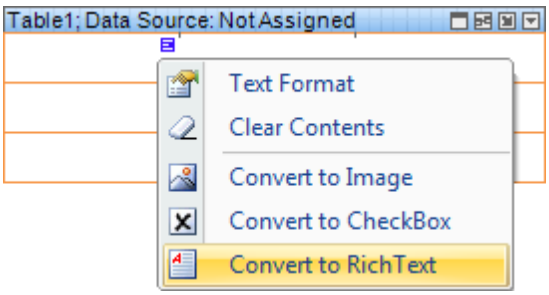
There are different types of cells can be placed In the Table component. They are a text, an image, a check, and a rich text.

1. Text is a cell will be output as a text. Cell settings are the same as the settings of a Text component;
2. Image is a cell will be output as a text.Cell settings are the same as the settings of an Image component;
3. Check is a cell will be output as a check for Boolean types of data. Cell settings are the same as the settings of a Check component;
4. Rich text is a cell will be output as a rich text. Cell settings are the same as the settings of a Rich Text component.

The **CellType** property is used to indicate a cell type.




Also it is possible to indicate a cell style by clicking the quick access button of a cell.




Or the context menu of a cell.

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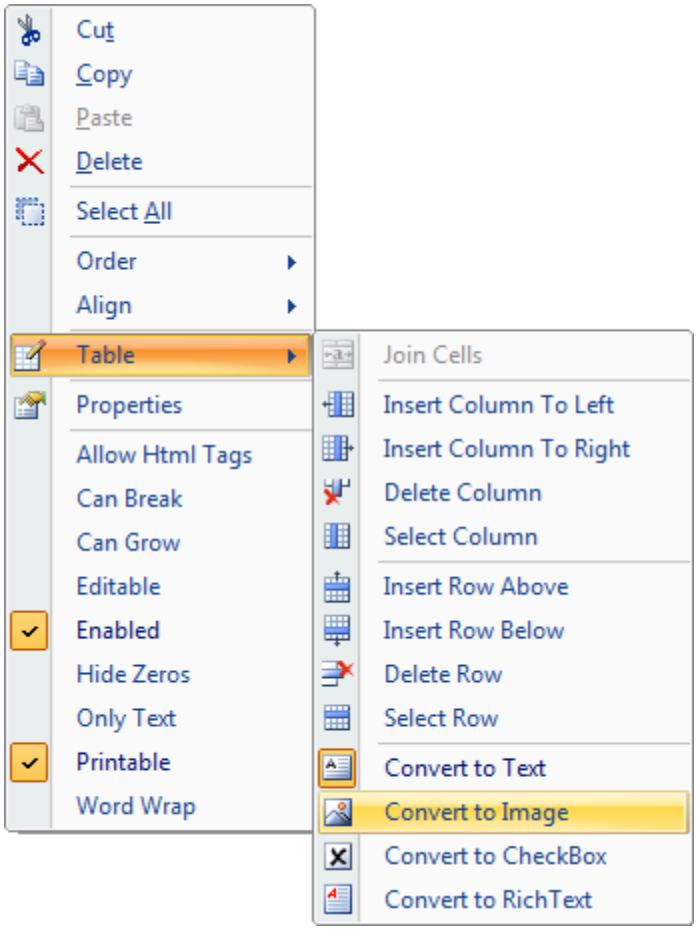
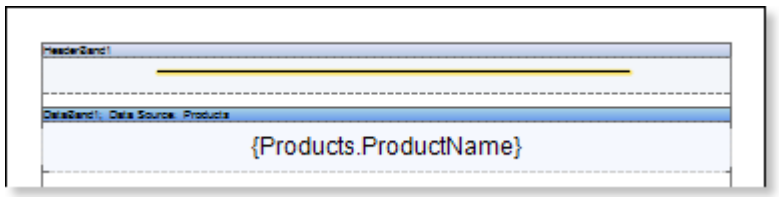



## 2.29. Primitives

Primitives include: **Horizontal Line** and **Shape**. Cross-primitives include: **Vertical Line**, **Rectangle** and **Rounded Rectangle**. **Horizontal line** is a line in the horizontal plane, which start and end points are located on the same component in a report. The picture below shows a report template with a list in which a **Horizontal Line** is located in the **HeaderBand**:




The **Shape** is a report component, which, depending on the type, shows this or that primitive. The **Shape Type** property is used to specify a primitive type. The picture below shows a list of values of the **Shape Type** property:

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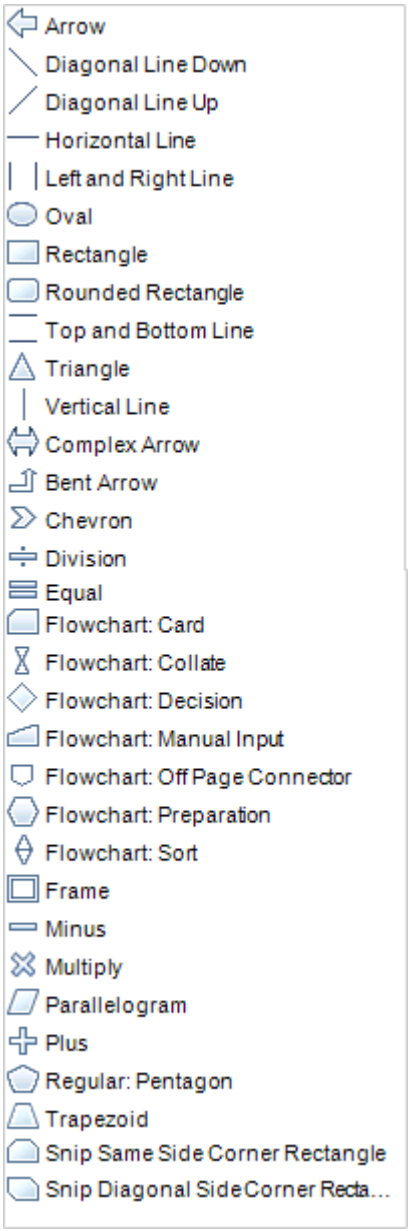


## 2.29.1. Cross-Primitives

Cross-primitives include: **Vertical Line**, **Rectangle** and **Rounded Rectangle**. The start and end points of cross-primitives can be placed on different components of a report. When designing a report with cross-primitives the report generator renders start and end points of a vertical line, and then, between two points, it renders a vertical line. The picture below shows an example of a report template with a rectangle:

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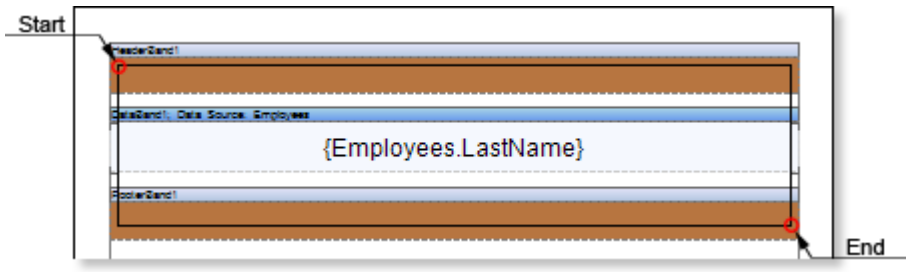
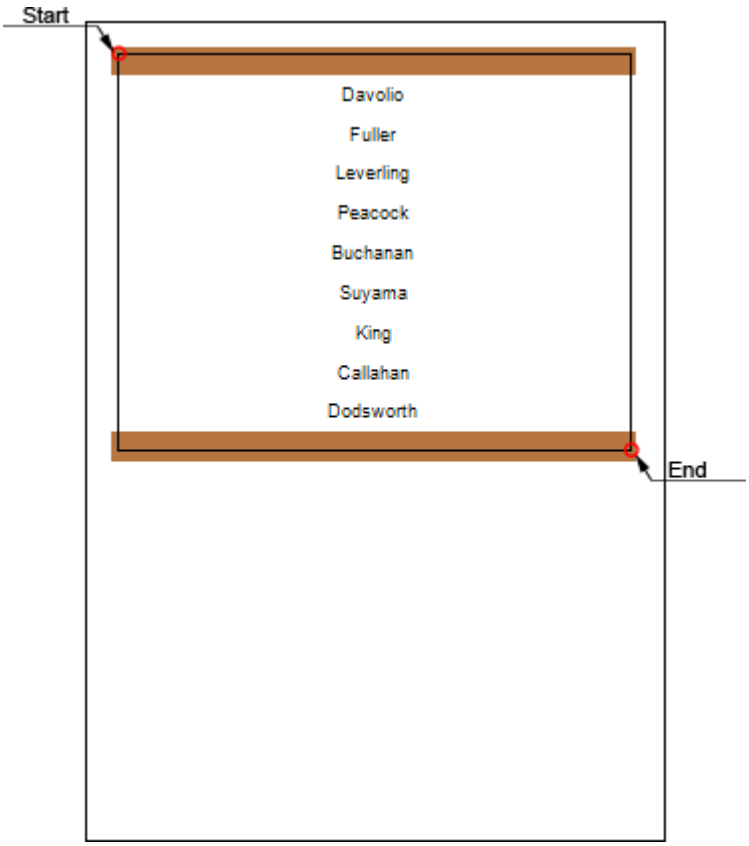



As can be seen in the picture, the start and end points of the **Rectangle** component are located on different bands: the start point is located in the **HeaderBand**, and the end point is in the **FooterBand**. When rendering the report, the report generator will render start and end points of the rectangle, and then it will render rectangle sides. The picture below shows an example of the rendered report pages with the **Rectangle** cross-primitive:




## 2.30. Sub-reports

The **Sub Report** is a report component that can be placed on a band, page, panel or any other component that can be a container for the sub-report. When placing this component, the reporting tool will add nested page into the report and bind it with the **Sub Report**. When rendering a report, the reporting tool will build all sub-reports and place them in this container. On the nested page a

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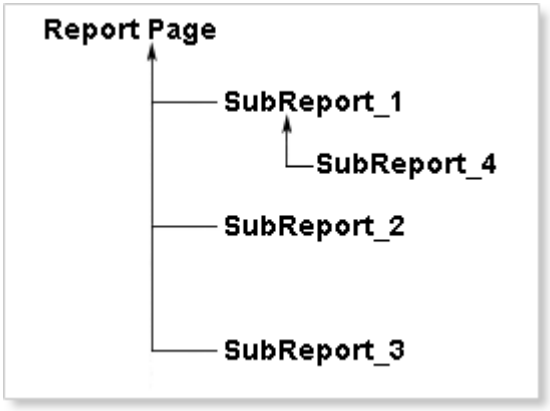
report that has any structure can be created. Also the **Sub-Report** component can be placed on the nested page, so the nested page of the second level will be created. In other words it is possible to create complex hierarchy in a report. The picture below shows the hierarchy of a sub-report:




As seen on the picture above, **SubReport_1**, **SubReport_2**, **SubReport_3** components are placed on the report page and the **SubReport_4** component is placed on the sub-report page of the **SubReport_1** component. So the page of the **SubReport_4** component is the nested page of the second level.

## 2.30.1. Sub-Reports on Page

The **Sub-Report** component can be placed on any part of a page. The width of the nested page depends on the width of the **Sub-Report** component. The picture below shows a sample of the **Sub-Report** component and nested page:

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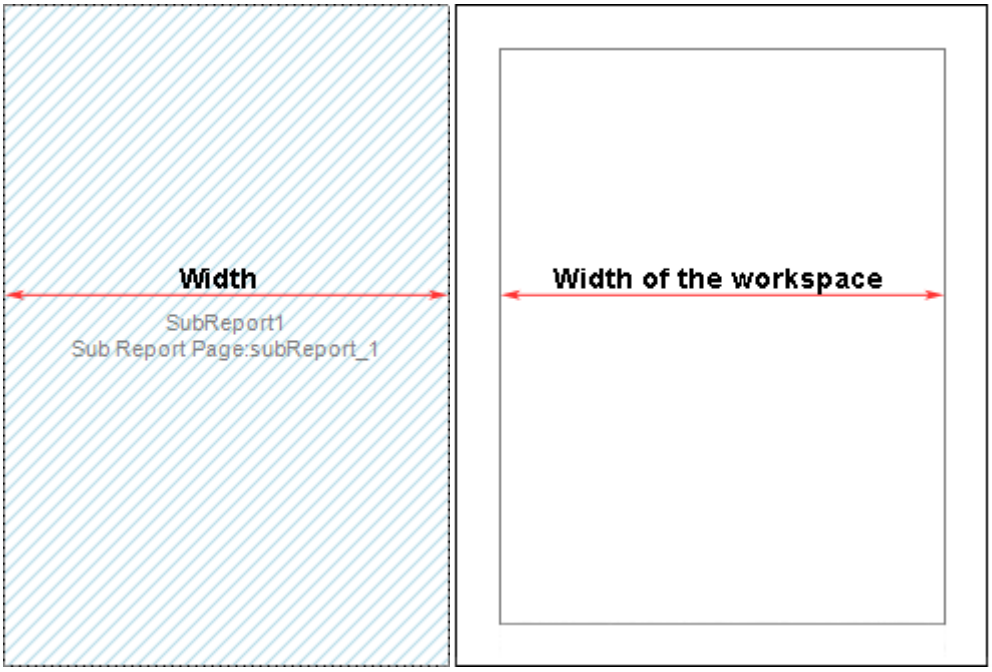


The **CanGrow** property of the **Sub-Report** component is always set to **true** but, when placing this component, it cannot be grown by height. So you should take into the account the height of the component on the nested page: it should not be higher than the **Sub-Report** component. When rendering a report, the **Sub-Report** component, placed on the report template, will be rendered as the report page item. When rendering a report, the reporting tool will render all sub-reports and place them in the container of the **Sub-Report** component. The picture below shows a sample of placing the nested page in a report:

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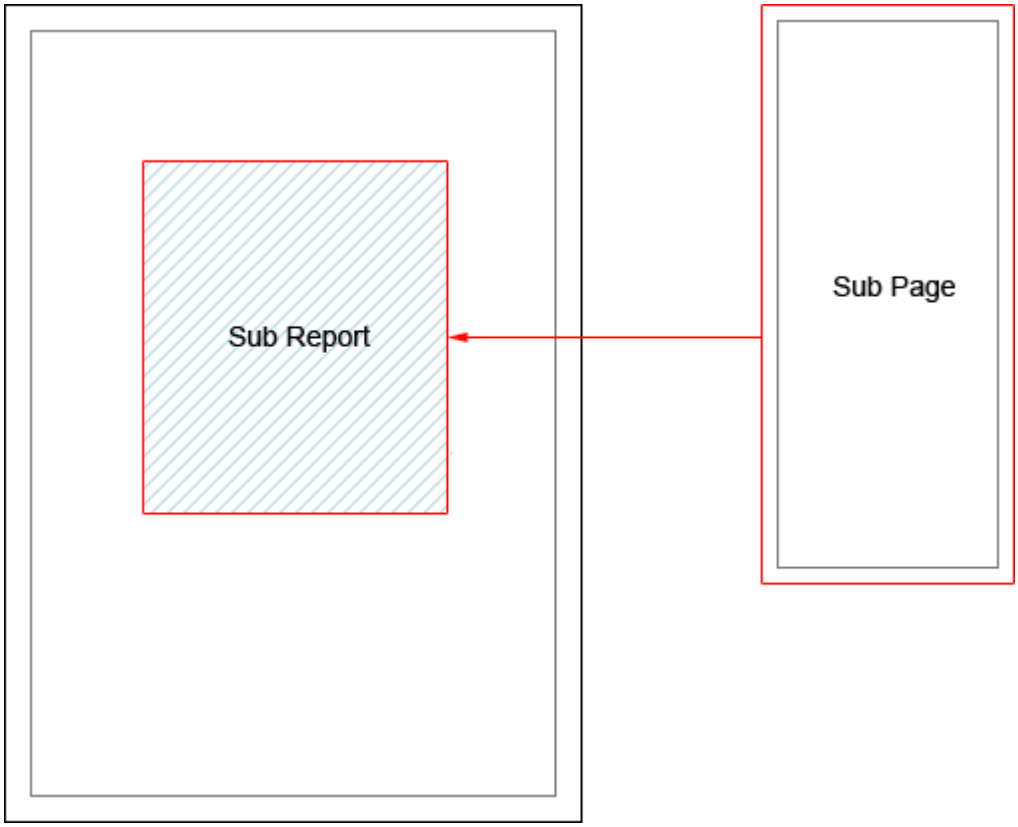


## 2.30.2. Sub-Reports on Data Band

The **Sub-Report** component can be placed on the **DataBand**. When rendering a report, the **Sub-Report** will be rendered as the item of the **DataBand**, so this component will be printed in each **DataBand**. The picture below shows the scheme of rendering of the sub-report when placing the **Sub-Report** component in the **DataBand**:

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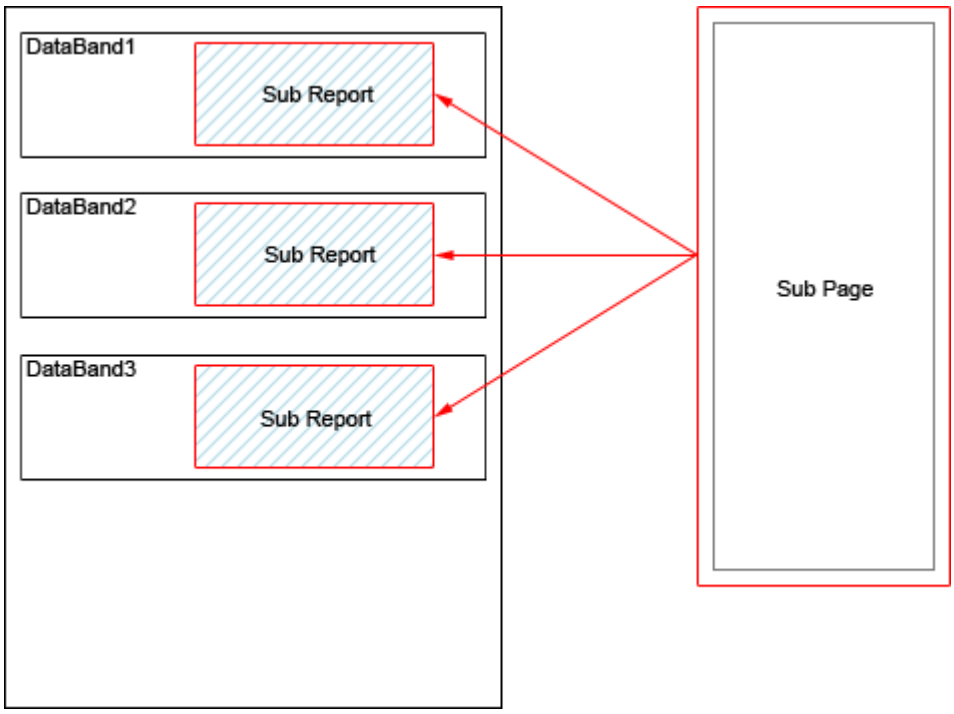


In this case the height of the component on the sub-report page of a report will be higher than the height of the **Sub-Report** component. So the **Sub Report** component is placed in the **DataBand** and rendered as the item of the **DataBand**, and, in this case, the **CanGrow** property works and the component can grow by height.

## 2.30.3. Master-Detail Reports and Sub-Reports

It is possible to design the **Master-Detail** report using the **Sub-Report** component. Put **DataBand1** on a page of a report template. Insert **Sub-Report** component into this band. Put **DataBand2** on the sub-report page. The picture below shows the report template:

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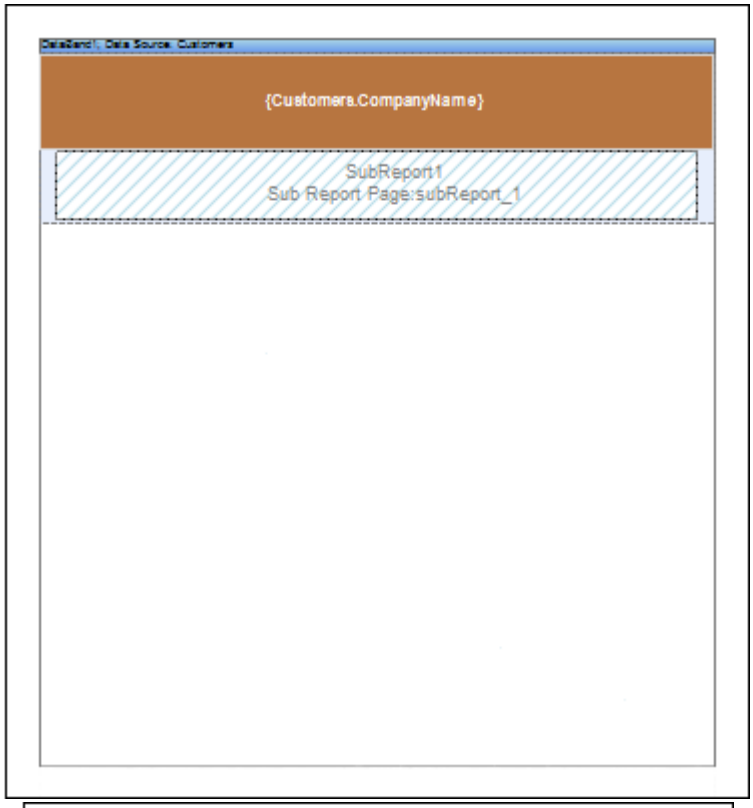


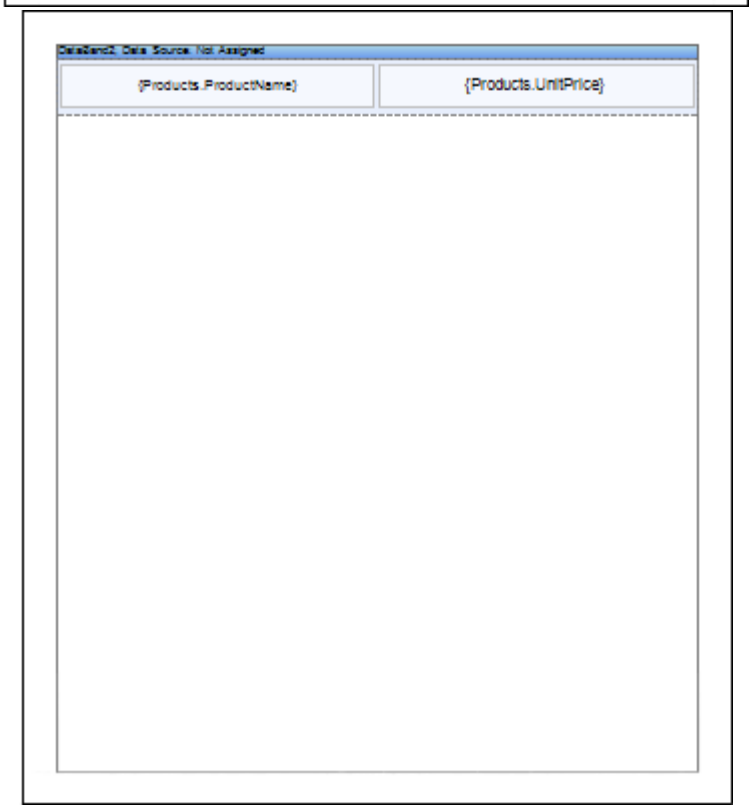


In this example the **DataBand1** can be defined as the **Master** for the **DataBand2** that is placed in the sub-report page of a report. For this you need to choose the **Master** component in the data

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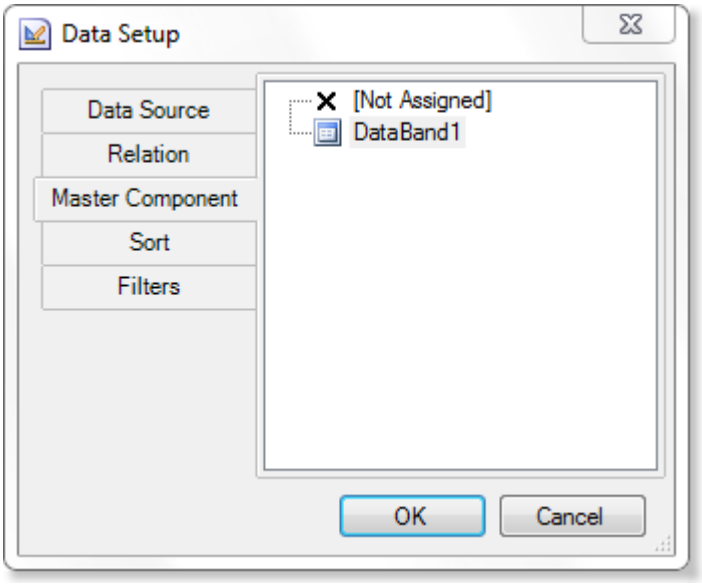
settings. The picture below shows the sample of the **Data Setup** window:




As you can see, the **DataBand1**, that is placed on the report page, is the **Master** in the **Master-Detail** report. If several **DataBands** are placed on the sub-report page then, when creating the **Master-Detail** report, the **Master** is either the **DataBand** in what the **Sub-Report** is placed or any other **DataBand**, placed in the sub-report page.

## 2.30.4. Side-by-Side Reports and Sub-Reports

You can use the **Sub-Report** component to create the **Side-by-side** report. The **Side-by-side** report consists of independent lists of data, located side by side. The picture below shows an example of a **Side-by-side** report template with the location of the **Sub-Report** component on on a page of the report template:

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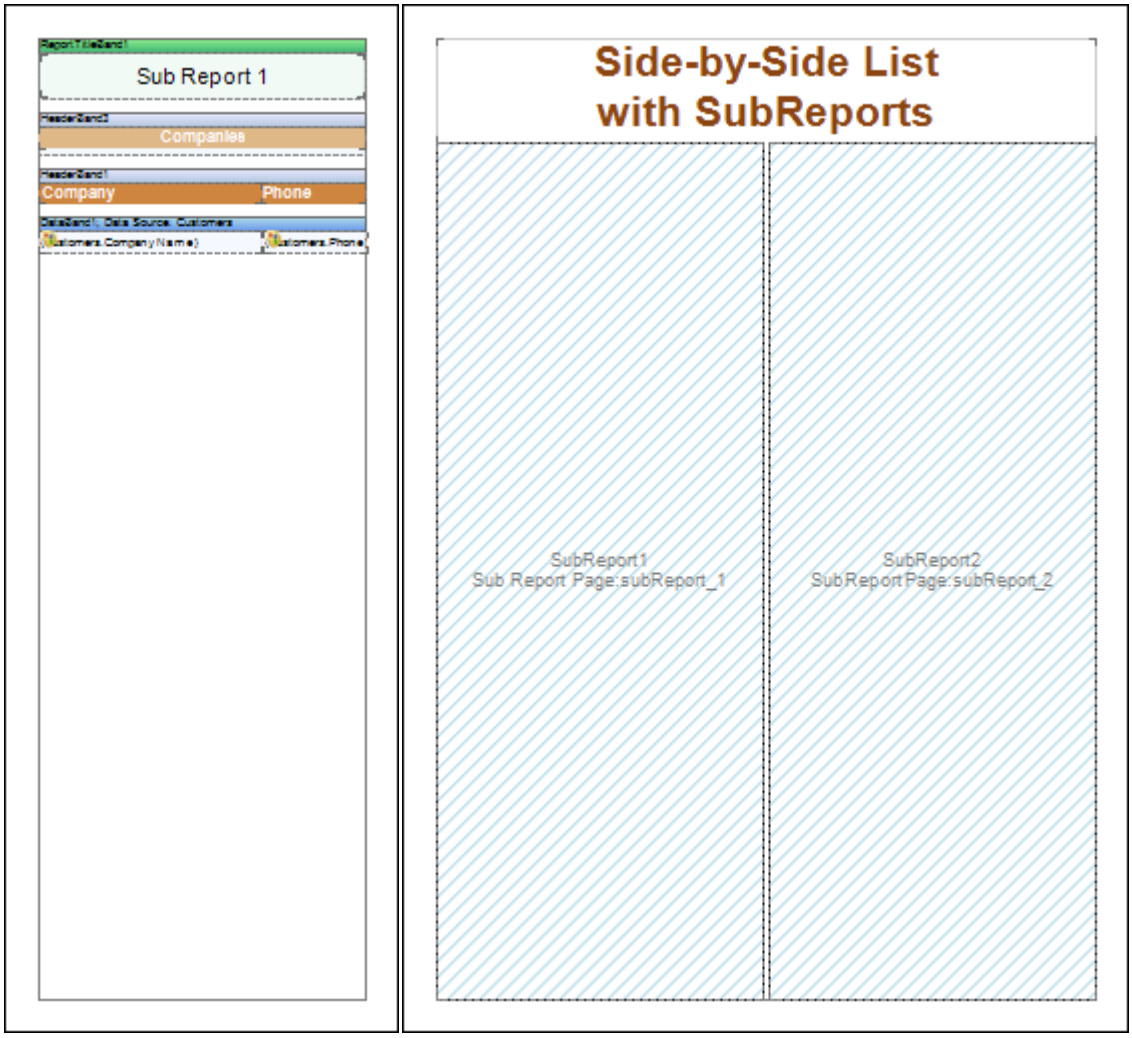
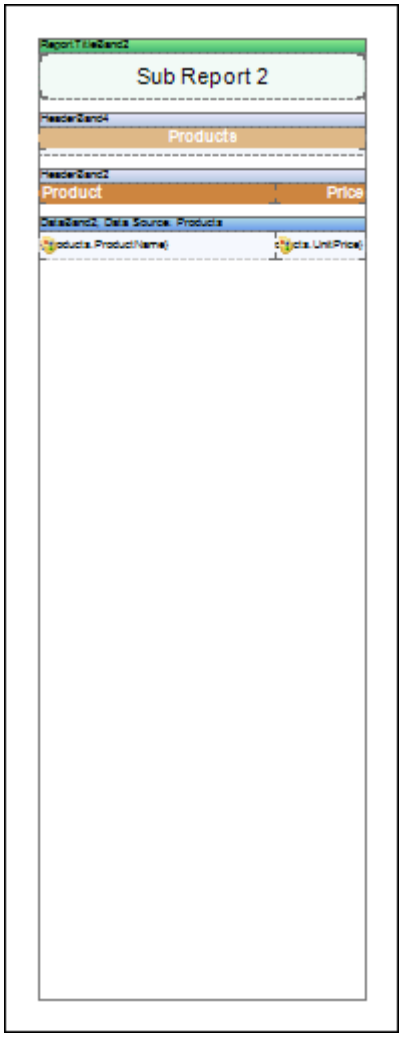

Sub Report 1
Companies
Company
Phone
Side-by-Side List
with SubReports
SubReport1
Sub Report Page:subReport_1
SubReport2
SubReport Page:subReport_2




As you can see on the picture above, when rendering a report, independent data lists will be displayed, i.e. two **Side-by-side** subreports will be built. Thus it is possible to build more complex reports: for example, put three **Sub-Report** components together side by side, and then, when rendering a report, three independent data lists, i.e. three **Side-by-side** subreports will be output. You should also remember that the **Sub-Report** can be placed in the **DataBand**. Accordingly, put two or more **Sub-Report** components to build **Side-by-side** reports in one **DataBand**. The picture below shows an example of the **Side-by-side** report templates with the location of the **Sub-Report** component in the **DataBand**:

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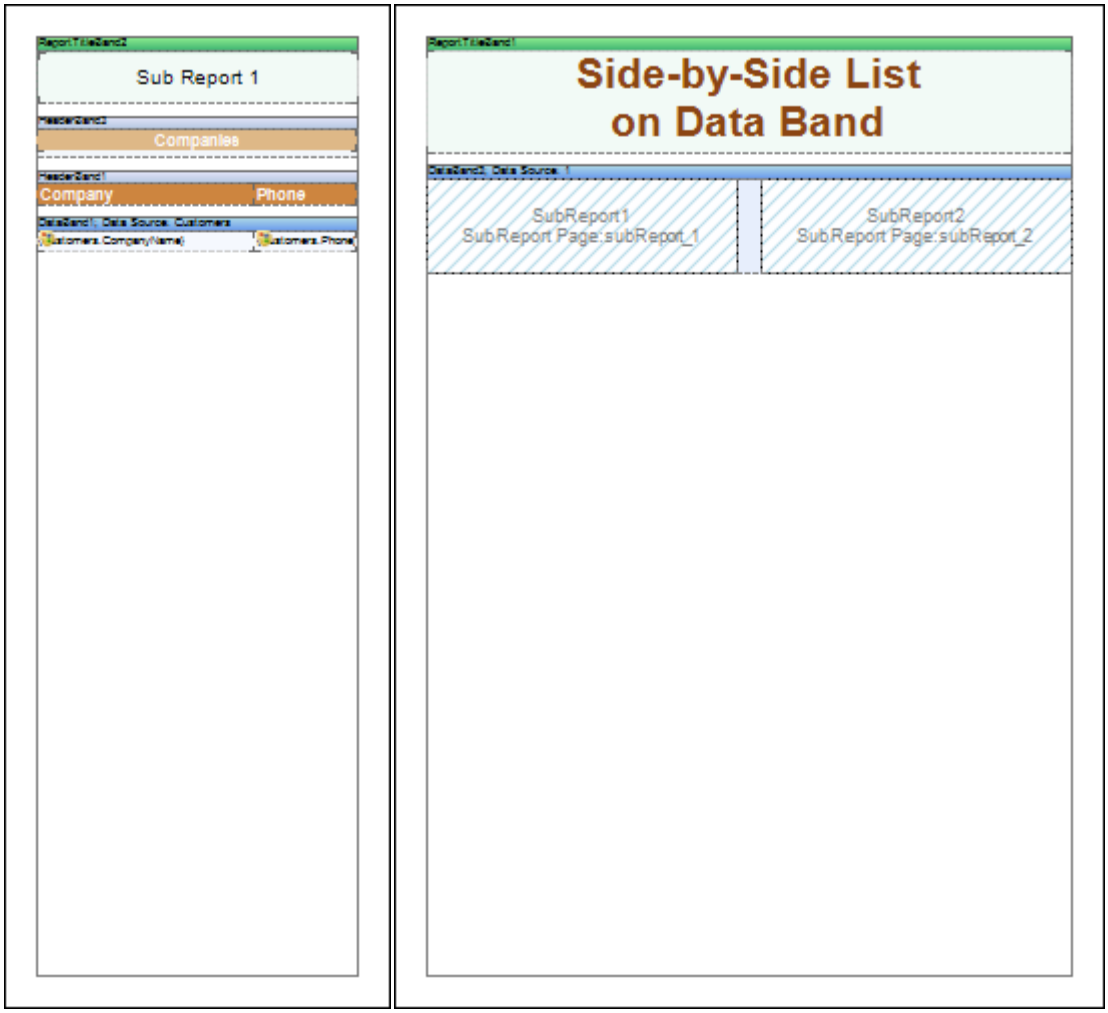


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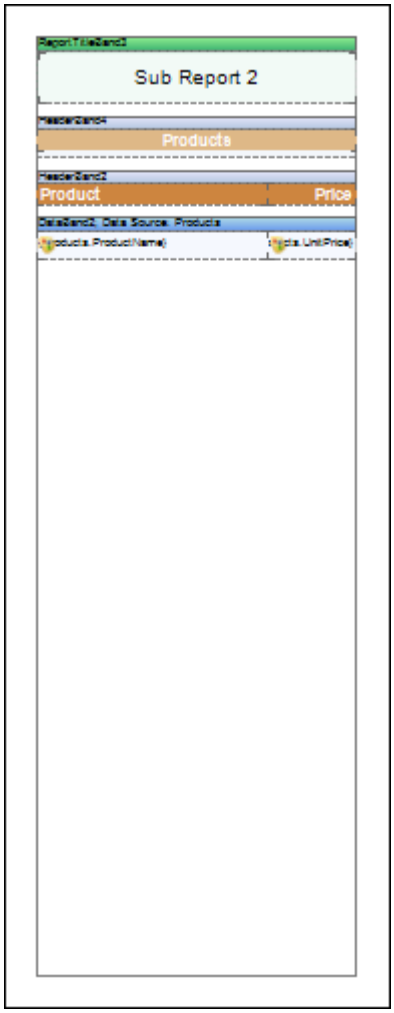


## 2.31. Scripts

Stimulsoft Reports supports a choice of languages for report generation.

### 2.31.1. Programming Language of Report

The report generator uses a single specified programming language to generate the report code and handle report events. If the current programming language of a report does not suit your requirements you can change it. The options are currently C# or VB.

Changing The Language Of The Current Report

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To do this select **File | Report Setup**. A new dialog will be displayed

In the Language group select a new programming language and press Ok. The current programming language will then be changed.

**Important:** The underlying report code will have to be regenerated for the entire report, and any changes which have been made within the report code will be lost.

Changing The Default Language

It is not convenient to change the programming language each time a report is rendered, so Stimulsoft Reports allows you to set the default programming language used by all new reports.

To do this you should use the Services Configurator utility. All programming languages in Stimulsoft Reports are located under the Languages node. The language which is shown first in the list is the default programming language. For example, on the picture below the C# programming language is the default programming language. To make VB.Net the default programming language simply drag the StiCSharpLanguage service down one position with the mouse or use the up and down buttons to re-order the languages.

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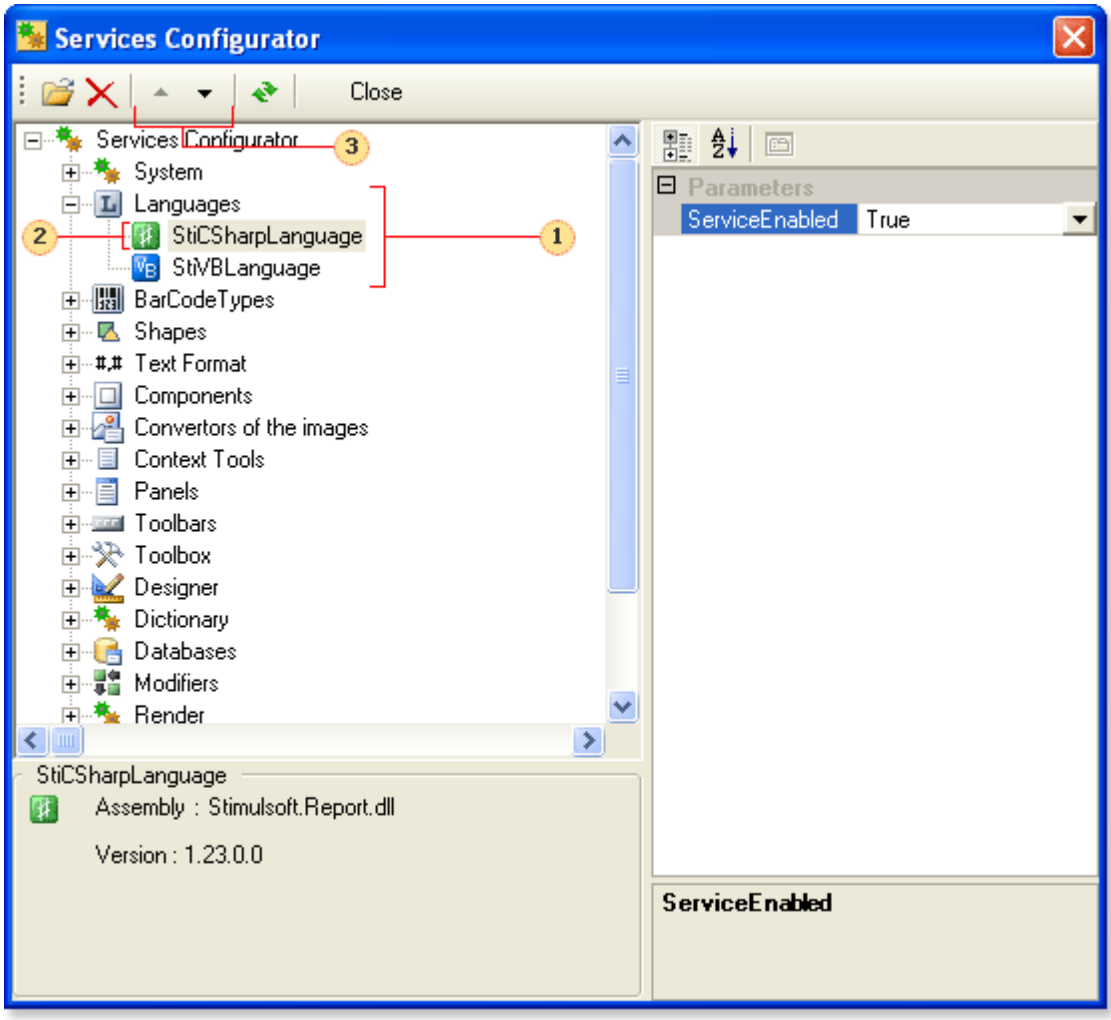


**Services Configurator Dialog**

| | |
|---|---|
| 1 | Supported programming languages |
| 2 | Default programming language. When reports are rendered, the first programming language in the Languages node of the Services tree will be used as the default. |
| 3 | Up and Down Buttons. To change the default programming language select a language and use these buttons to change its position in the tree. |

See Also: Report Code

## 2.31.2. Report Code

When you create a new report its source code, often called the report script, is generated automatically using either C# or VB.NET programming language depending on the currently selected default. You can use only one of these programming languages at a time

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In the report code the structure and initialization of the report class, which itself inherits from the StiReport class, are described. When adding new pages, components or changing any parameters of a report, those changes are automatically recorded within the class. The report class therefore contains a description of all components, data, events, report properties, and data source structures for the report. Any events specified by the user are also added to the report code.

For the ultimate in power and flexibility Stimulsoft Reports allows direct editing of the report code - if you want something not provided by the available properties and features of the designer you can actually code your own features within the report. When writing events or another code in the report, you use the standard syntax of the selected .Net Framework programming language i.e. if the language is set to C# you write code using C# syntax.

**Note:** The report code is generated in **C#** or **VB.Net** programming language. All events and any another code in this report must be written in the currently selected language.

When rendering reports, compilation of the report class occurs first. After that the compiled report is executed.

**Note:** The report code is compiled using the .NET Framework compiler.

**Reviewing and Editing the Report Code**

To see the report code click the Code tab in the designer. The code will then be displayed:

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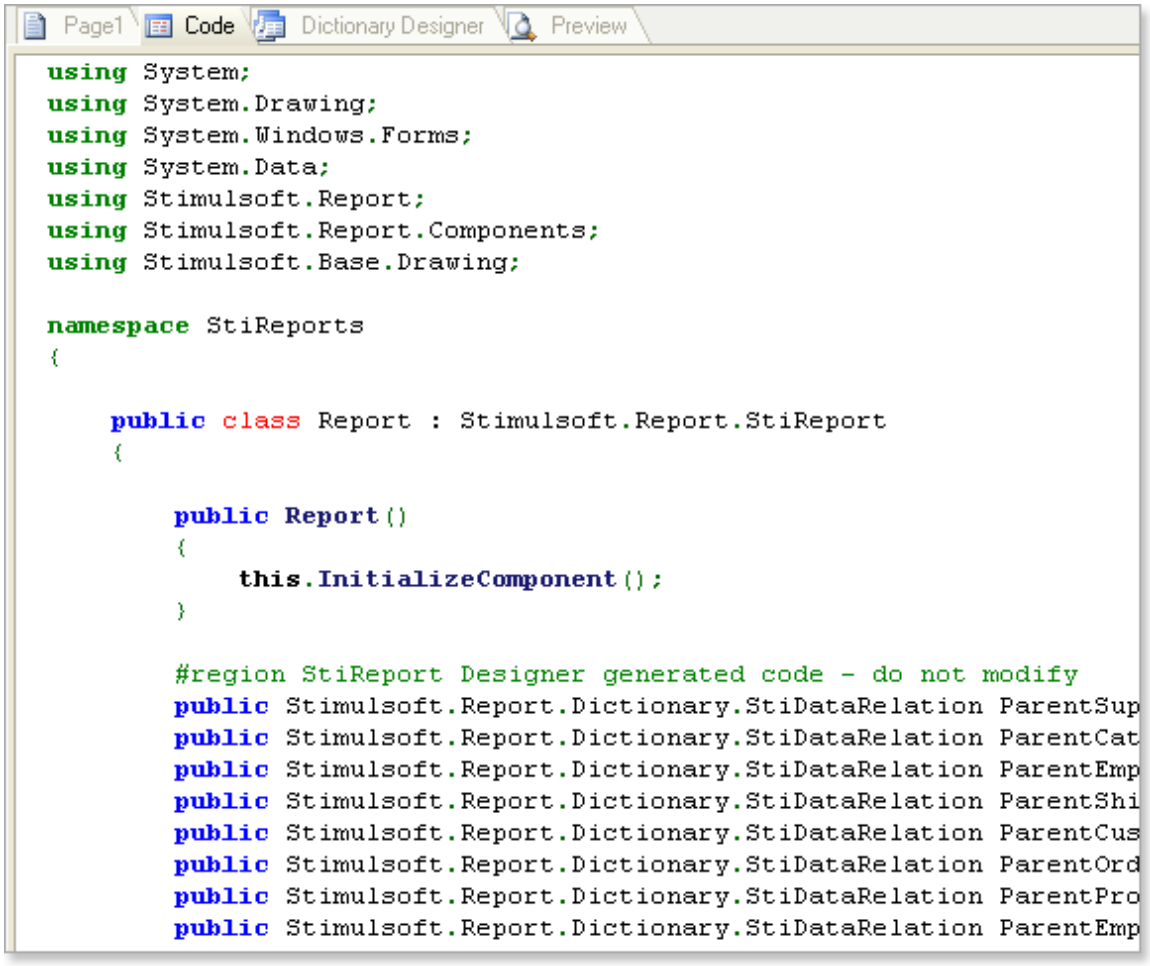


To edit the code, simply start typing in the appropriate place.

**Important:** Do not change preprocessor directives or automatically updated code.

Whilst Stimulsoft Reports allows you to directly edit the report code, it is important to remember that it is impossible to make changes in the parts of the report code which are automatically updated - such changes will be lost when the next update takes place. The automatically updated report code is enclosed in Region preprocessor directives:

**At the beginning of the automatically updated code**

```
#region StiReport Designer generated code - do not modify

Automatically updated code goes here
```

**the end of the automatically updated code**

```
#endregion StiReport Designer generated code - do not modify
```

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Any code that you write within the report must be written outside these Regions.

## 2.32. Totals

In many reports it is necessary to calculate totals: totals by a page, number of rows in a group, average value etc. For all these calculations it is possible to use aggregate functions. Using aggregate functions, it is possible to calculate a sum, number of rows, average values, maximal values, minimal values, to get first values from the list, to get last values from the list etc. The ranges of rows can be all rows of a list, rows on one page, rows from one group, rows from one container etc.

Stimulsoft Reports supports the following aggregate functions:

- **Avg** - returns the average value of the specified expression;
- **Count** - returns the number of rows in the specified range;
- **CountDistinct** - returns the number of unique rows in the specified range;
- **First** - returns the first value in the specified range;
- **Last** - returns the last value in the specified range;
- **Max** - returns the maximal value of the specified expression;
- **Median** - returns the median of all values of the specified range;
- **Min** - returns the minimal value of the specified expression;
- **Mode -** returns the greatest value of the specified range;
- **Sum** - returns the sum of the specified expression.

### 2.32.1. Calculation of Totals Associated with Bands

#### 2.32.1.1. Totals Output in Any Part of Report

Usually, components in what text expressions the aggregate function call is specified, must be put on the total band or on the **Data** band. If it is required to output the total on the **Header** band then it is either impossible or possible using the script. But in Stimulsoft Reports the component with the aggregate function can be placed in any kind of a band.

Also you can put an aggregate function on a page and other pages. For example, you can calculate the sum of values in the list and show it in the header of the list. Also you may calculate the number of strings and show its value in the beginning of a page. At that there is a restriction. You should specify to which the Data band does this aggregate function belong. For this you should specify the Data band as a function argument. For example:

- this expression will return the number of strings of the DataBand1 band.

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**Notice.** Components with aggregate functions can be put in any part of a report.

Also it is possible to put an aggregate function on a page and other pages. For example, it is possible to calculate the sum of values by the list and show it in the header of the list. Also it is possible to calculate the number of rows and show its value in the beginning of a page. But there is a restriction. It is necessary to specify to which **Data** band does this aggregate function belong. For this, it is necessary to specify the **Data** band as a function argument. For example:

```
{Sum(DataBand1, Products. UnitsInStock)}
```

- this expression will return the sum of values of the **Products.UnitsInStock** column for every row of the **DataBand1**. Considering the **Count** aggregate function:

```
{Count(DataBand1)}
```

- this expression will return the number of rows of the **DataBand1**.

### 2.32.1.2. Type of Result of Total Function

By default, all total functions return the value of the **Decimal** type (except **Count** and **CountDistinct** ). In addition Stimulsoft Reports allows making calculations using two types of data: **Double** and **Int64**. If you want the aggregate function to return the result of calculation using the **Double** type of data, write the Latin letter **D** in uppercase before the function name. For calculations using the **Int64** type it is necessary to add Latin letter **I** in uppercase. For example, for calculation sum using the **Int64** type it is necessary to write:

```
SumI
```

For the **Double** type:

```
SumD
```

For the **Decimal** type:

```
Sum
```

It allows preventing losses in totals calculation.

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| Aggregate function spelling | Type of return value |
|---|---|
| Sum | Decimal |
| SumD | Double |
| SumI | Int64 |

I, D letters can be added to any functions except for: **Count** and **CountDistinct**. These functions always return the Int64 type .

**Notice.** The **Count** and **CountDistinct** functions are always calculated using the **Int64** type**.**

### 2.32.1.3. Expression with Aggregate Functions

To sum up all values of one column it is enough to write the following text expression of a component:

```
{Sum(DataSource.Column)}
```

Also it is acceptable to use complex expressions:

```
{100 + Sum(DataSource.Column) * 2}
```

For example, it is necessary to output number of rows and the sum of values. For this, it is necessary to add the **Footer** band to the report. Put two **Text** components on this band. Write in the first component the following expression:

```
{Count()}
```

in this component the number of rows will be output.

Write in the second component the following expression:

```
{Sum(Products.UnitsInStock)}
```

in this component the sum of values of the **UnitsInStock** column will be output.

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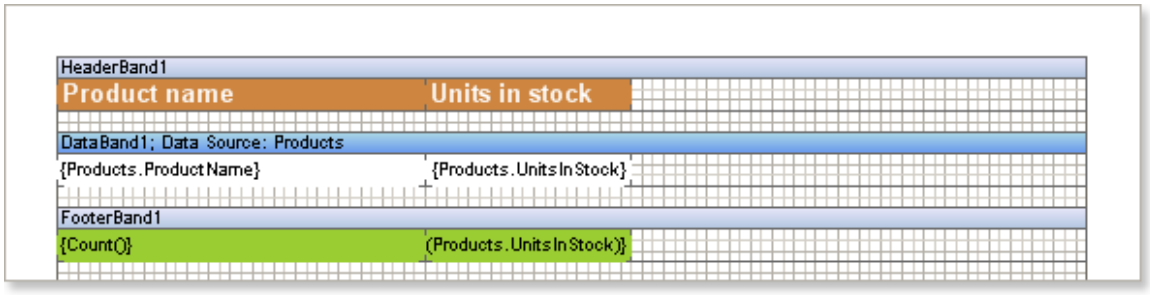
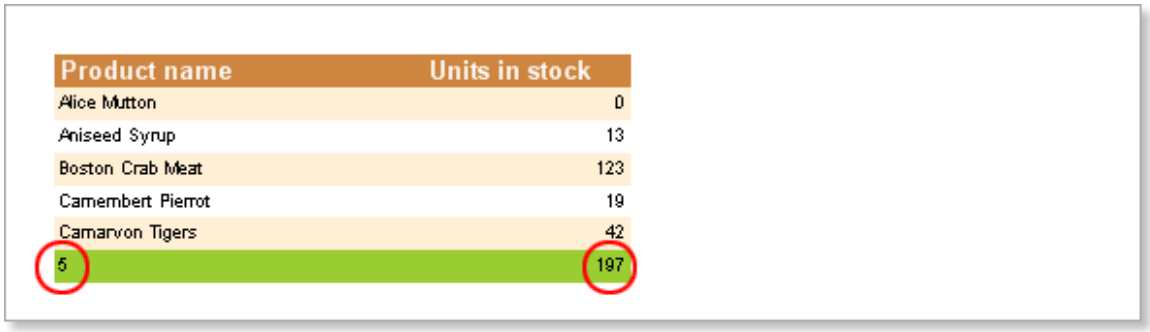



As one can see from the sample, there is no need in additional arguments for calculation of number of rows of the **Count** function. One argument was specified to the **Sum** function. It is the expression that should be summed up. In other words the report generator specified to which **Data** band all these aggregate functions belong to and how many times these functions must be called.



| Product name | Units in stock |
|---|---|
| Alice Mutton | 0 |
| Aniseed Syrup | 13 |
| Boston Crab Meat | 123 |
| Camembert Pierrot | 19 |
| Camarvon Tigers | 42 |
| 5 | 197 |

This occurred because text components, in which aggregate functions was used, were placed on the total **Footer** band. This band belongs to a **Data** band. This enables the report generator to bind the aggregate functions and the **Data** band automatically.
There are several types of total bands in Stimulsoft Reports. They are as follow:

- **ReportSummaryBand** - this band is used to output totals of the whole report;
- **PageFooterBand** - this band is used to output totals by a page;
- **FooterBand** - this band is used to output totals by a list;
- **GroupFooterBand** - this band is used to output totals by a group.

Placing components and aggregate functions together allows the report generator to indicate to which **Data** band do these aggregate functions belong. Also, in addition, it is possible put the component with aggregate function on the **Data** band. In this case there will be an output of the result of an aggregate function calculation of all strings.

**Notice.** In most cases Stimulsoft Reports automatically binds the aggregate function and the **Data** band together.

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### 2.32.1.4. Calculating Totals by Page

It is very simple to calculate totals of a container or a page. For this it is necessary to add before the name of an aggregate function the Latin letter **c** in lowercase. For example:

```
{cCount(DataBand1)}
```

- this expression will return the number of rows of one page.

**Notice.** A page is a container too. Therefore, calculation of totals of a page goes the same way as calculation of totals of a container.

When calculation of totals of a panel or of a page it is necessary specify the **Data** band by what the aggregate function will be calculated. It is necessary because more than one **Data** band can be placed on one page.

**Notice.** For calculation of an aggregate function by a panel it is enough to add Latin letter **c** before the name of this aggregate function.

Any number of aggregate functions can be used on one page or a panel. Stimulsoft Reports has no limit in it. It is possible to combine totals of a page with a condition. For example:

```
{CountIf(DataBand1, Products.UnitsInStock = 0)}
```

- the expression will return the number of elements equal zero on this page.

### 2.32.1.5. Calculating Totals by Column

Using Stimulsoft Reports it is possible to calculate total by a column. Just write **col** (from **column**) in lowercase before the aggregate function name. For example:

```
{colCount()}
```

- the expression will return the number of rows in one column.

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| | | | |
|---|---|---|---|
| 22.Familia Arquibaldo | (11) 555-9857 | 66.Rattlesnake Canyon Grocery | (505) 555-5939 |
| 23.FISSA Fabrica Inter. Salchichas SA. | (91) 555 94 44 | 67.Reggiani Caseifici | 0522-556721 |
| 24.Folies gourmandes | 20.16.10.16 | 68.Ricardo Adocicados | (21) 555-3412 |
| 25.Folk och fä HB | 0695-34 67 21 | 69.Richter Supermarkt | 0897-034214 |
| 26.France restauration | 40.32.21.21 | 70.Romero y tomillo | (91) 745 6200 |
| 27.Franchi S.p.A. | 011-4988260 | 71.Santé Gourmet | 07-98 92 35 |
| 28.Frankenversand | 089-0877310 | 72.Save-a-lot Markets | (208) 555-8097 |
| 29.Furia Bacalhau e Frutos do Mar | (1) 354-2534 | 73.Seven Seas Imports | (171) 555-1717 |
| 30.Galería del gastrónomo | (93) 203 4560 | 74.Simons bistro | 31 12 34 56 |
| 31.Godos Cocina Típica | (95) 555 82 82 | 75.Spécialités du monde | (1) 47.55.60.10 |
| 32.Gourmet Lanchonetes | (11) 555-9482 | 76.Split Rail Beer & Ale | (307) 555-4680 |
| 33.Great Lakes Food Market | (503) 555-7555 | 77.Suprêmes délices | (071) 23 67 22 20 |
| 34.GROSELLA-Restaurante | (2) 283-2951 | 78.The Big Cheese | (503) 555-3612 |
| 35.Hanari Carnes | (21) 555-0091 | 79.The Cracker Box | (406) 555-5834 |
| 36.HILARION-Abastos | (5) 555-1340 | 80.Toms Spezialitäten | 0251-031259 |
| 37.Hungry Coyote Import Store | (503) 555-6874 | 81.Tortuga Restaurante | (5) 555-2933 |
| 38.Hungry Owl All-Night Grocers | 2967 542 | 82.Tradição Hipermercados | (11) 555-2167 |
| 39.Island Trading | (198) 555-8888 | 83.Trail's Head Gourmet Provisioners | (206) 555-8257 |
| 40.Königlich Essen | 0555-09876 | 84.Vaffeljernet | 86 21 32 43 |
| 41.La corne d'abondance | 30.59.84.10 | 85.Victuailles en stock | 78.32.54.86 |
| 42.La maison d'Asie | 61.77.61.10 | 86.Vins et alcools Chevalier | 26.47.15.10 |
| 43.Laughing Bacchus Wine Cellars | (604) 555-3392 | 87.Wartian Herkku | 981-443655 |
| 44.Lazy K Kountry Store | (509) 555-7969 | 88.Wellington Importadora | (14) 555-8122 |
| | 44 | | 44 |

| Company | Phone |
|---|---|
| 89.White Clover Markets | (206) 555-4112 |
| 90.Wilman Kala | 90-224 8858 |
| 91.Wolski Zajazd | (26) 642-7012 |
| | 3 |

There is one restriction in calculation of totals by a column in Stimulsoft Reports. Totals can only be calculated by columns on a page. It is impossible to calculate totals by columns in the **Data** band.

**Important!** Totals can only be calculated by columns on a page. It is impossible to calculate totals by columns in the **Data** band.

When calculating totals by a column, the text component with aggregate function should be placed on **ColumnHeader**, **ColumnFooter**, **Header** of **Footer** bands.

**Important.** For calculation aggregate functions by column it is enough to add **col** before the name of an aggregate function.

It is possible to calculate unlimited number of totals by column. There are no limitations in this case. Also it is possible to combine totals by column with condition. For example:

```
{colCountIf(DataBand1, Products.UnitsInStock = 0)}
```

- this expression will return the number of rows, which condition is set to **true**, by a column.

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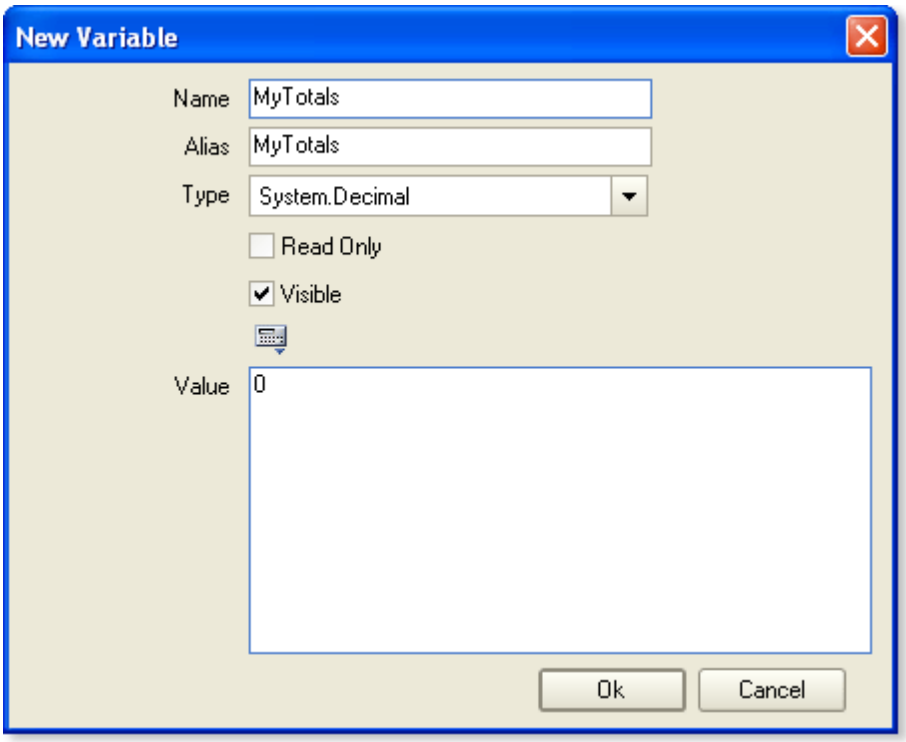
### 2.32.1.6. Calculating Totals in Code of Report Events

Using Stimulsoft Reports you may make calculation of aggregate functions in the code of events of a report. This allows calculating aggregate functions with complex logic or condition. Another advantage of Stimulsoft Reports is that, when calculating, you call the value to be calculated from the report code and make changes. If you want to make such a calculation, the variable which stores the value of an aggregate function is required. For this, you should create a new variable in the data dictionary.

**Important!** Using variables from the code to store the result of an aggregate function calculation is not allowed. It is necessary to use variables created in the dictionary.




Here you specify the type of a variable, for example **Decimal**, and the initial value is zero. Then in the **Render** event of the **Data** band you should set the code for a variable increment. For example, if you want to calculate the sum of variables of the **Products.ItemsInStock** field then the code will be as follows:

```
MyTotals += Products.ItemsInStock;
```

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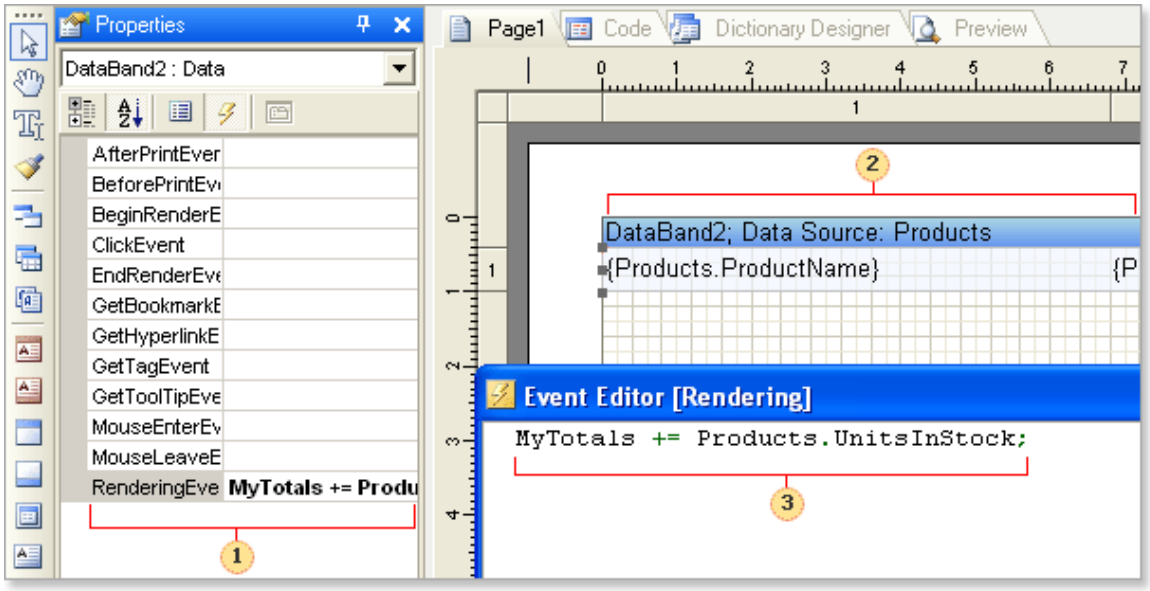



1 The **RenderingEvent** event
2 The **Data** band in what the **RenderingEvent** event calculation will be made
3 The code for calculating the sum

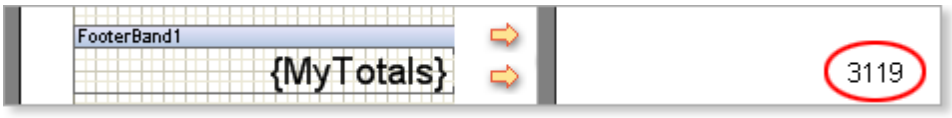
For calling the variable, that contains the value of a total, write in the following in the text expression:

```
{MyTotal}
```

If, after you have written the text expression, you run the report rendering. Then, when the report rendering will reach the component which contains the expression with the total variable, then there will be an output of this variable. Therefore, you should specify to the report generator that the component output must be done right after the whole report rendering - when the variable will be calculated completely. For this, you must set the **ProcessAtEnd** property of the text component to **true**.

**Notice.** Expressions of text components which the **ProcessAtEnd** properties are set to **true** are always calculated at the end of the report rendering.

As was written before the total will be calculated and shown in the proper part of a report.

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### 2.32.1.7. Invisible Bands

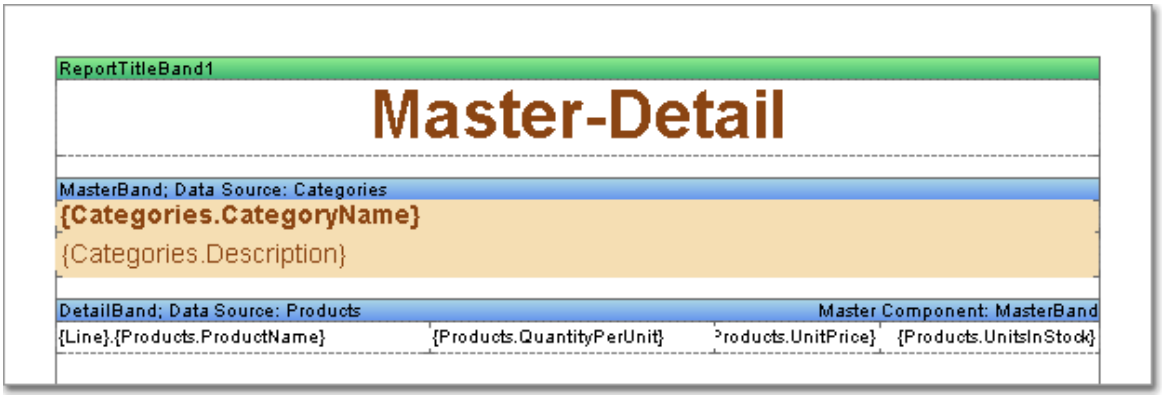
Many reports use invisible bands by a certain condition. By default, the report generator will not consider disabled **Data** bands. But it is necessary, when calculating totals, also to consider invisible **Data** bands then it is necessary to set the **CalcInvisible** property of the **Data** band to **true**. In this case only invisible **Data** bands will be output and, when calculating aggregate functions, all rows will be calculated.

### 2.32.1.8. Totals and Automatic Change of Size

There is one feature when using automatic change of a size of a component that is responsible for the calculation of totals output. As a rule in the moment when the component size indication is in process, the result of the aggregate function is unknown. Therefore, the component cannot correct its size considering the result of an aggregate function. This feature should be considered when reports rendering.

### 2.32.1.9. Calculating Totals in Master-Detail Reports

When building the **Master-Detail** reports you may meet the problem with calculation of totals in hierarchical reports. What is it? Suppose, you have a list of products which is output by categories. The report is built using **Master-Detail** relations. In other words we have a certain number of master strings (categories) and a certain number of detail strings (products).

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# Master-Detail

**Beverages**

Soft drinks, coffees, teas, beers, and ales

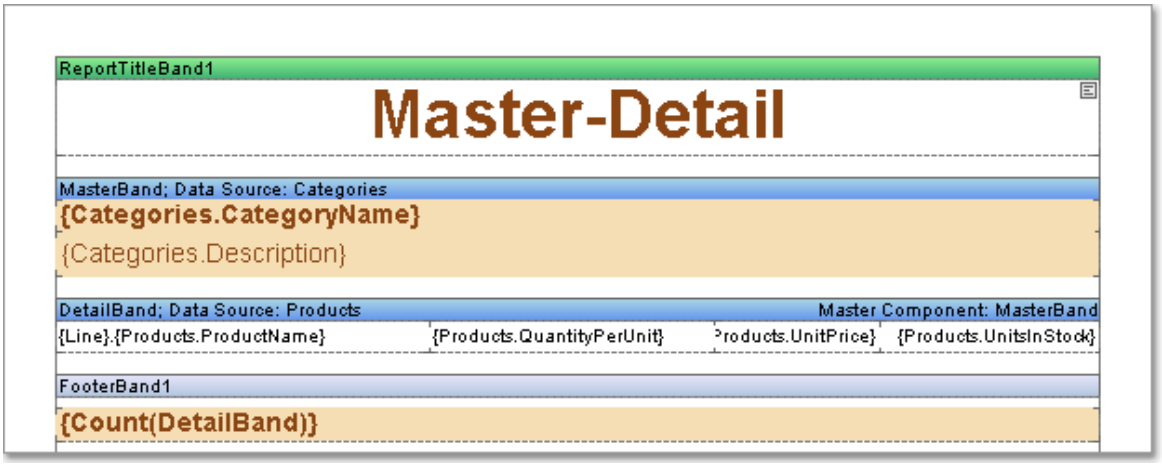
| | | | |
|---|---|---|---|
| 1.Chai | 10 boxes x 20 bags | 18,00р. | 39,00 |
| 2.Chang | 24 - 12 oz bottles | 19,00р. | 17,00 |
| 3.Guaraná Fantástica | 12 - 355 ml cans | 4,50р. | 20,00 |
| 4.Sasquatch Ale | 24 - 12 oz bottles | 14,00р. | 111,00 |
| 5.Steeleye Stout | 24 - 12 oz bottles | 18,00р. | 20,00 |
| 6.Côte de Blaye | 12 - 75 cl bottles | 263,50р. | 17,00 |
| 7.Chartreuse verte | 750 cc per bottle | 18,00р. | 69,00 |
| 8.Ipoh Coffee | 16 - 500 g tins | 46,00р. | 17,00 |
| 9.Laughing Lumberjack Lager | 24 - 12 oz bottles | 14,00р. | 52,00 |
| 10.Outback Lager | 24 - 355 ml bottles | 15,00р. | 15,00 |
| 11.Rhönbräu Klosterbier | 24 - 0.5 l bottles | 7,75р. | 125,00 |
| 12.Lakkalikööri | 500 ml | 18,00р. | 57,00 |

**Condiments**

Sweet and savory sauces, relishes, spreads, and seasonings

| | | | |
|---|---|---|---|
| 1.Aniseed Syrup | 12 - 550 ml bottles | 10,00р. | 13,00 |

So we need to count how many products are output in the report. If we add the **FooterBand** with the aggregate function to the **Detail** band, then we will get the total by each group.

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# Master-Detail

**Beverages**

Soft drinks, coffees, teas, beers, and ales

| | | | |
|---|---|---|---|
| 1.Chai | 10 boxes x 20 bags | 18,00p. | 39,00 |
| 2.Chang | 24 - 12 oz bottles | 19,00p. | 17,00 |
| 3.Guaraná Fantástica | 12 - 355 ml cans | 4,50p. | 20,00 |
| 4.Sasquatch Ale | 24 - 12 oz bottles | 14,00p. | 111,00 |
| 5.Steeleye Stout | 24 - 12 oz bottles | 18,00p. | 20,00 |
| 6.Côte de Blaye | 12 - 75 cl bottles | 263,50p. | 17,00 |
| 7.Chartreuse verte | 750 cc per bottle | 18,00p. | 69,00 |
| 8.Ipoh Coffee | 16 - 500 g tins | 46,00p. | 17,00 |
| 9.Laughing Lumberjack Lager | 24 - 12 oz bottles | 14,00p. | 52,00 |
| 10.Outback Lager | 24 - 355 ml bottles | 15,00p. | 15,00 |
| 11.Rhönbräu Klosterbier | 24 - 0.5 l bottles | 7,75p. | 125,00 |
| 12.Lakkalikööri | 500 ml | 18,00p. | 57,00 |

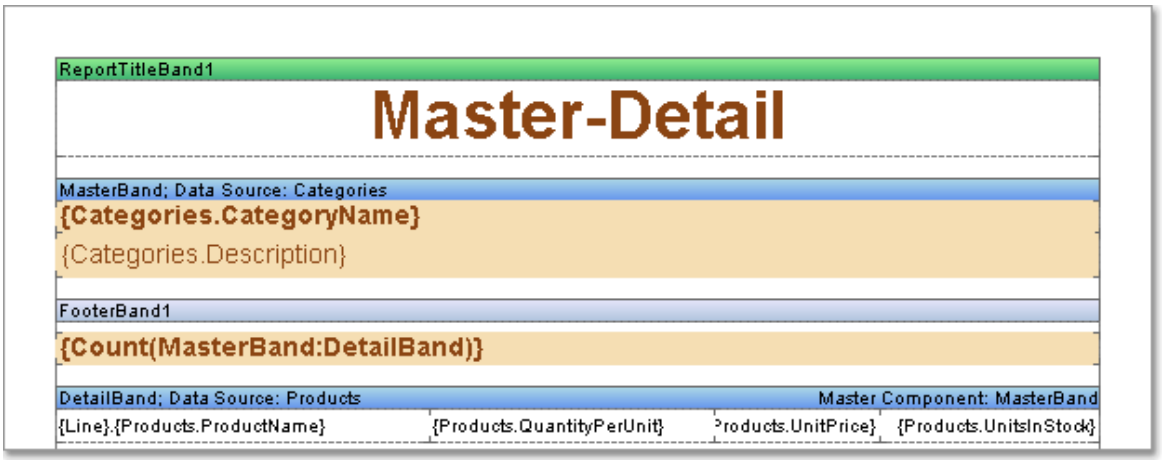
**12**

**Condiments**

Sweet and savory sauces, relishes, spreads, and seasonings

| | | | |
|---|---|---|---|
| 1.Aniseed Syrup | 12 - 550 ml bottles | 10,00p. | 13,00 |

If we add the **FooterBand** to the **MasterBand** then we will get the number of categories. In this case it is possible to use the calculation of totals. For this purpose you need to specify names of both **DataBands** in the aggregate function. In our case: **Count(MasterBand: DetailBand)**.



ReportTitleBand1

Master-Detail

MasterBand; Data Source: Categories

{Categories.CategoryName}

{Categories.Description}

FooterBand1

{Count(MasterBand:DetailBand)}

DetailBand; Data Source: Products — Master Component: MasterBand

| | | | |
|---|---|---|---|
| {Line}.{Products.ProductName} | {Products.QuantityPerUnit} | ?roducts.UnitPrice} | {Products.UnitsInStock} |

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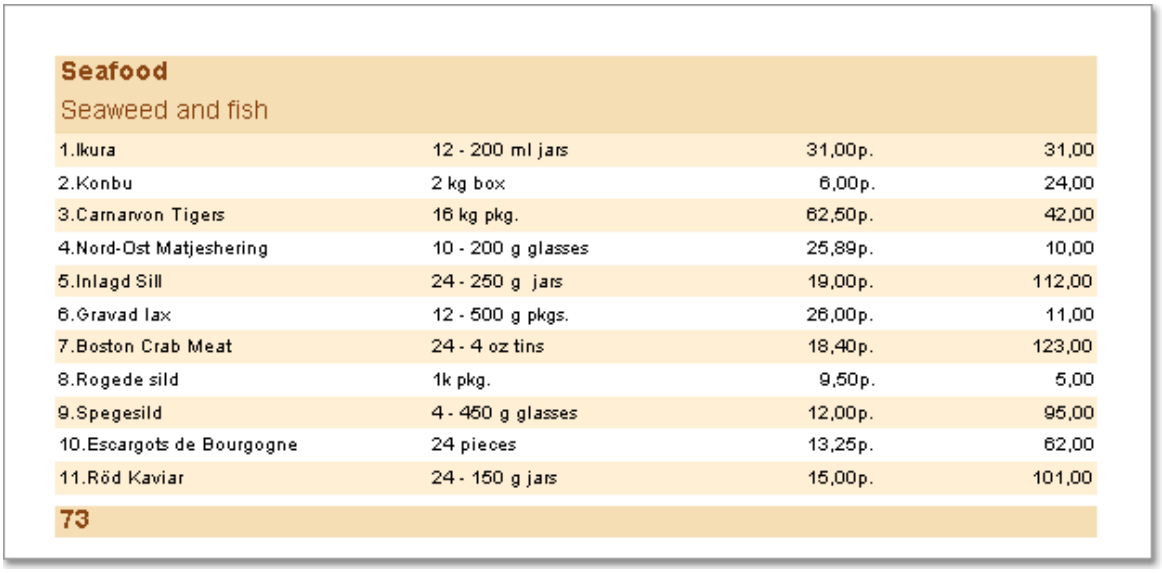

| Seafood | | | |
|---|---|---|---|
| Seaweed and fish | | | |
| 1.Ikura | 12 - 200 ml jars | 31,00p. | 31,00 |
| 2.Konbu | 2 kg box | 6,00p. | 24,00 |
| 3.Carnarvon Tigers | 16 kg pkg. | 62,50p. | 42,00 |
| 4.Nord-Ost Matjeshering | 10 - 200 g glasses | 25,89p. | 10,00 |
| 5.Inlagd Sill | 24 - 250 g jars | 19,00p. | 112,00 |
| 6.Gravad lax | 12 - 500 g pkgs. | 26,00p. | 11,00 |
| 7.Boston Crab Meat | 24 - 4 oz tins | 18,40p. | 123,00 |
| 8.Rogede sild | 1k pkg. | 9,50p. | 5,00 |
| 9.Spegesild | 4 - 450 g glasses | 12,00p. | 95,00 |
| 10.Escargots de Bourgogne | 24 pieces | 13,25p. | 62,00 |
| 11.Röd Kaviar | 24 - 150 g jars | 15,00p. | 101,00 |
| 73 | | | |

The result of the **Count(MasterBand:DetailBand)** function is the number of products by all categories.

### 2.32.1.10. Totals with Condition

Often it is necessary to calculate totals with condition. For example, it is necessary to sum up all values greater than zero. Stimulsoft Reports allows adding a condition to an aggregate function. When a condition is added to an aggregate function one should add **If** to this aggregate function name and additional argument with condition. For example:

```
{SumIf(Products.UnitsInStock, Products.UnitsInStock > )}
```

- this expression will return the sum of elements, and each element should be greater than zero. For the **Count** function:

```
{CountIf(Products.UnitsInStock == 0)}
```

- this expression will return the number of elements equal zero. If it is necessary to make calculation using the **Double** type or the **Int64** type, then add the Latin letter **D** or **I**, and them the **If**. For example:

```
{SumDIf(Products.UnitsInStock, Products.UnitsInStock > 0)}
```

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### 2.32.1.11. Syntax of Aggregated Functions

See the aggregate functions syntax by the example of the **Sum** function:

**Sum(expression)**
**Sum(band, expression)**
**SumIf(band, expression, condition)**

**expression** – an expression for calculation;
**band** – a name of a band for calculation;
**condition** – a condition of inclusion of an expression into the calculation.

When an aggregate function by a page or container is calculated, you should write a letter "**c**" first and then the aggregate function name. See the sample:

**cSum(expression)**
**cSum(band, expression)**
**cSumIf(band, expression, condition)**

For calculation of totals of a container you should write **col** first and then the aggregate function name:

**colSum(expression)**
**colSum(band, expression)**
**colSumIf(band, expression, condition)**

The **Count** function has a distinguishing feature from other aggregate functions. It does not have an expression for calculation. Syntax of this function see below:

**Count()**
**CountIf (condition)**
**Count (band)**
**CountIf(band, condition)**
**cCount ()**
**cCount (band)**
**cCountIf(band, condition)**
**colCount ()**
**colCount (band)**
**colCountIf(band, condition)**

**Important!** When using C# programming language, all aggregate functions should be written considering the case.

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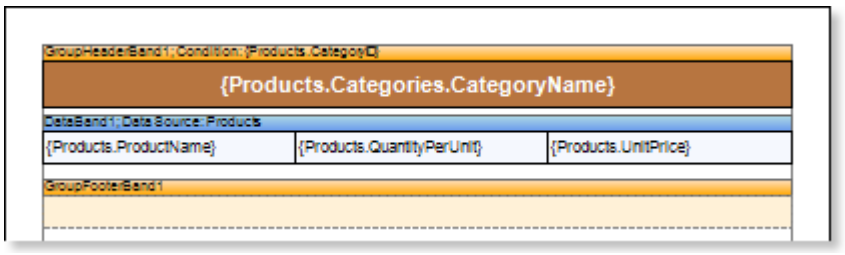
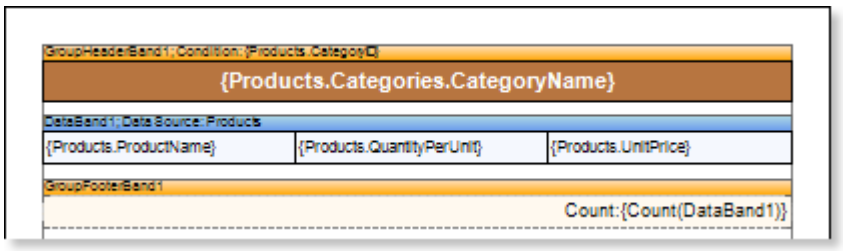
## 2.32.2. Calculation of Totals not Associated with Bands

The calculation totals in a report can be done by specifying an expression, for example, **{Sum (DataBand1)}**. These totals are calculated when rendering the report: each time when a single operation with the **DataBand** is done, a single value is calculated. All calculated values makes a total value, which will be displayed. In Stimulsoft Reports calculation of totals can be produced in another way - instantly. You should use the special **Totals** prefix. Calculation of **totals** occurs where the function is called, in contrast to standard results, calculations are performed while report rendering. Consider the calculation of totals in a report by the example of a report with grouping. Suppose there is a report with grouping. The picture below shows a report template with the group:




In this example, we calculate the totals using the **Count** function. This function calculates the number of rows. Put the text component in the **GroupFooterBand** band with the following expression: **{Count (DataBand1)}**. The picture below shows a report template with the grouping and the **Count** function in the **GroupFooterBand**:




When rendering a report, the report generator renders a report with groups, and then calculates total values by groups and displays them. The picture below shows a report page displaying the totals by groups:

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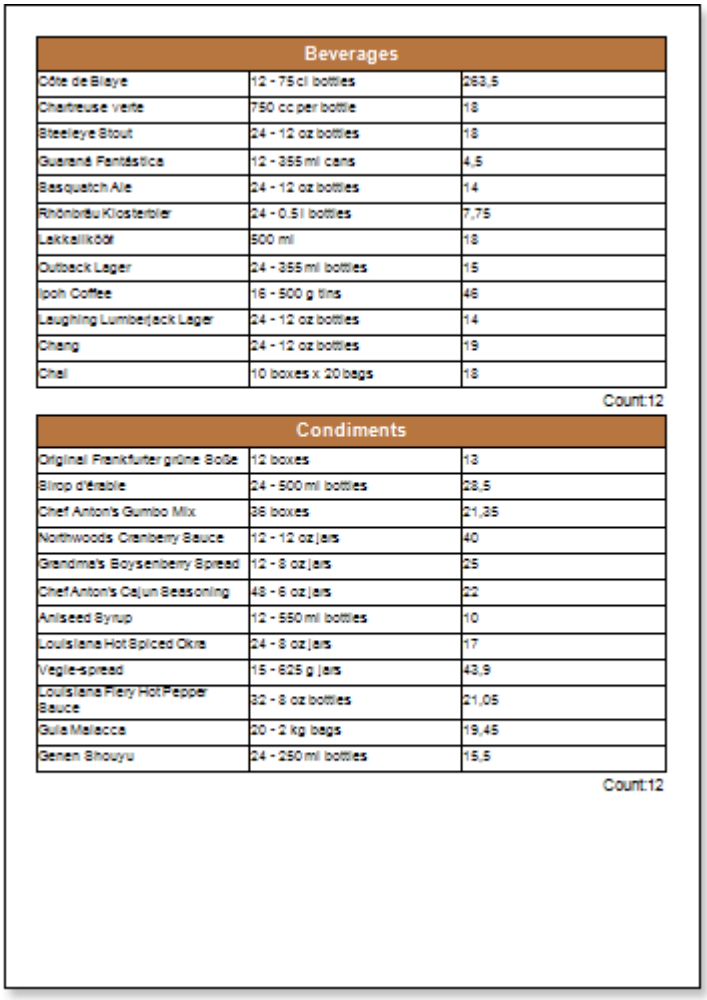


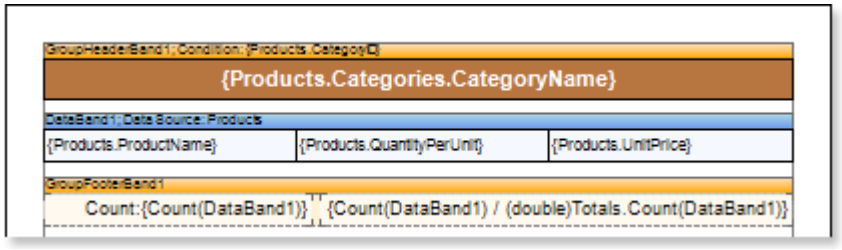
| Beverages | | |
|---|---|---|
| Côte de Blaye | 12 - 75 cl bottles | 263,5 |
| Chartreuse verte | 750 cc per bottle | 18 |
| Steeleye Stout | 24 - 12 oz bottles | 18 |
| Guaraná Fantástica | 12 - 355 ml cans | 4,5 |
| Sasquatch Ale | 24 - 12 oz bottles | 14 |
| Rhönbräu Klosterbier | 24 - 0.5 l bottles | 7,75 |
| Lakkalikööri | 500 ml | 18 |
| Outback Lager | 24 - 355 ml bottles | 15 |
| Ipoh Coffee | 16 - 500 g tins | 46 |
| Laughing Lumberjack Lager | 24 - 12 oz bottles | 14 |
| Chang | 24 - 12 oz bottles | 19 |
| Chai | 10 boxes x 20 bags | 18 |

Count:12

| Condiments | | |
|---|---|---|
| Original Frankfurter grüne Soße | 12 boxes | 13 |
| Sirop d'érable | 24 - 500 ml bottles | 28,5 |
| Chef Anton's Gumbo Mix | 36 boxes | 21,35 |
| Northwoods Cranberry Sauce | 12 - 12 oz jars | 40 |
| Grandma's Boysenberry Spread | 12 - 8 oz jars | 25 |
| Chef Anton's Cajun Seasoning | 48 - 6 oz jars | 22 |
| Aniseed Syrup | 12 - 550 ml bottles | 10 |
| Louisiana Hot Spiced Okra | 24 - 8 oz jars | 17 |
| Vegie-spread | 15 - 625 g jars | 43,9 |
| Louisiana Fiery Hot Pepper Sauce | 32 - 8 oz bottles | 21,05 |
| Gula Malacca | 20 - 2 kg bags | 19,45 |
| Genen Shouyu | 24 - 250 ml bottles | 15,5 |

Count:12

Go back to the report template. Calculate the ratio of entries in the group to entries in the report and show the total in per cent. To do this, add a text component in the **GroupFooterBand** with the following **{Count (DataBand1) / (double) Totals.Count (DataBand1)}** expression, where the **Count (DataBand1)** function will count the number of rows in the group, and the **Totals.Count (DataBand1)** function will calculate the number of rows in the report. To show the total value in per cent, you should to set the **Text Format** property of the text component to **Percentage**. The picture below shows a report template with the added text component in the **GroupFooterBand**:




Click the **Preview** button or invoke the **Viewer**, pressing **F5** or clicking the **Preview** menu item. After rendering all references to data fields will be changed on data form specified fields. Data will be output in consecutive order from the database that was defined for this report. The amount of copies

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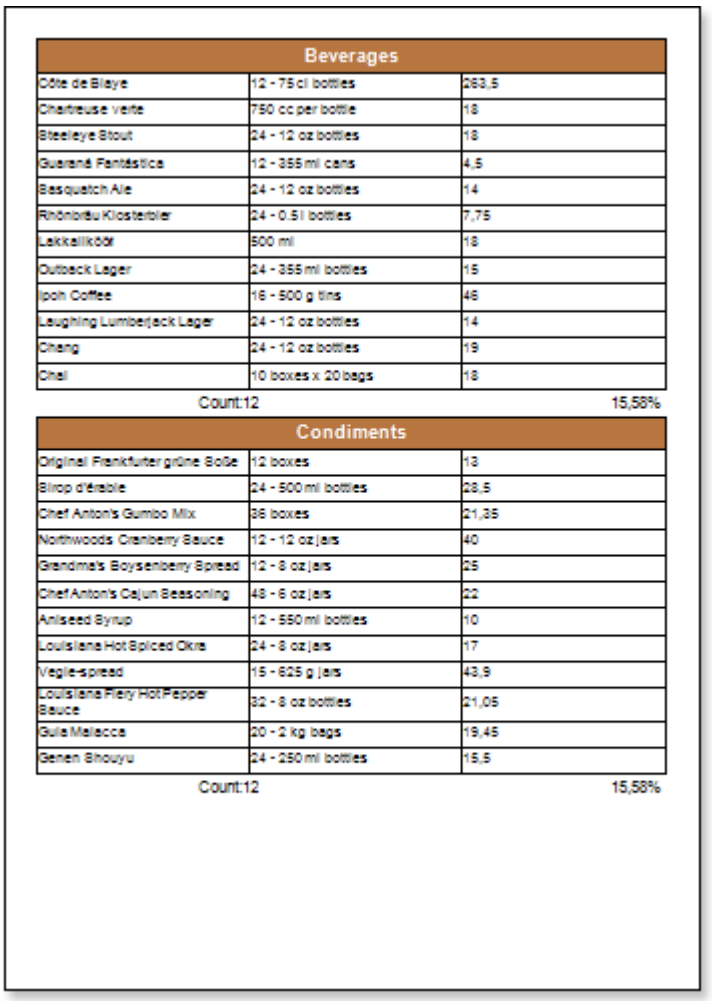
of the **DataBand** in the rendered report will be the same as the amount of data rows in the database. Also the calculation of totals will be done. The picture below shows a rendered report with ratio (in per cent) of entries in the group to entries in the report:



| Beverages | | |
|---|---|---|
| Côte de Blaye | 12 - 75 cl bottles | 263,5 |
| Chartreuse verte | 750 cc per bottle | 18 |
| Steeleye Stout | 24 - 12 oz bottles | 18 |
| Guaraná Fantástica | 12 - 355 ml cans | 4,5 |
| Sasquatch Ale | 24 - 12 oz bottles | 14 |
| Rhönbräu Klosterbier | 24 - 0.5 l bottles | 7,75 |
| Lakkalikööri | 500 ml | 18 |
| Outback Lager | 24 - 355 ml bottles | 15 |
| Ipoh Coffee | 16 - 500 g tins | 46 |
| Laughing Lumberjack Lager | 24 - 12 oz bottles | 14 |
| Chang | 24 - 12 oz bottles | 19 |
| Chai | 10 boxes x 20 bags | 18 |
| Count:12 | | 15,58% |

| Condiments | | |
|---|---|---|
| Original Frankfurter grüne Soße | 12 boxes | 13 |
| Sirop d'érable | 24 - 500 ml bottles | 28,5 |
| Chef Anton's Gumbo Mix | 36 boxes | 21,35 |
| Northwoods Cranberry Sauce | 12 - 12 oz jars | 40 |
| Grandma's Boysenberry Spread | 12 - 8 oz jars | 25 |
| Chef Anton's Cajun Seasoning | 48 - 6 oz jars | 22 |
| Aniseed Syrup | 12 - 550 ml bottles | 10 |
| Louisiana Hot Spiced Okra | 24 - 8 oz jars | 17 |
| Vegie-spread | 15 - 625 g jars | 43,9 |
| Louisiana Fiery Hot Pepper Sauce | 32 - 8 oz bottles | 21,05 |
| Gula Malacca | 20 - 2 kg bags | 19,45 |
| Genen Shouyu | 24 - 250 ml bottles | 15,5 |
| Count:12 | | 15,58% |

## 2.33. Interaction

Stimulsoft Reports has a set of features to render interactive reports. They are bookmarks, hyperlinks, Drill-Down links, dynamic sorting, dynamic collapsing, editing reports in the window of preview. All these features are described in chapters below.

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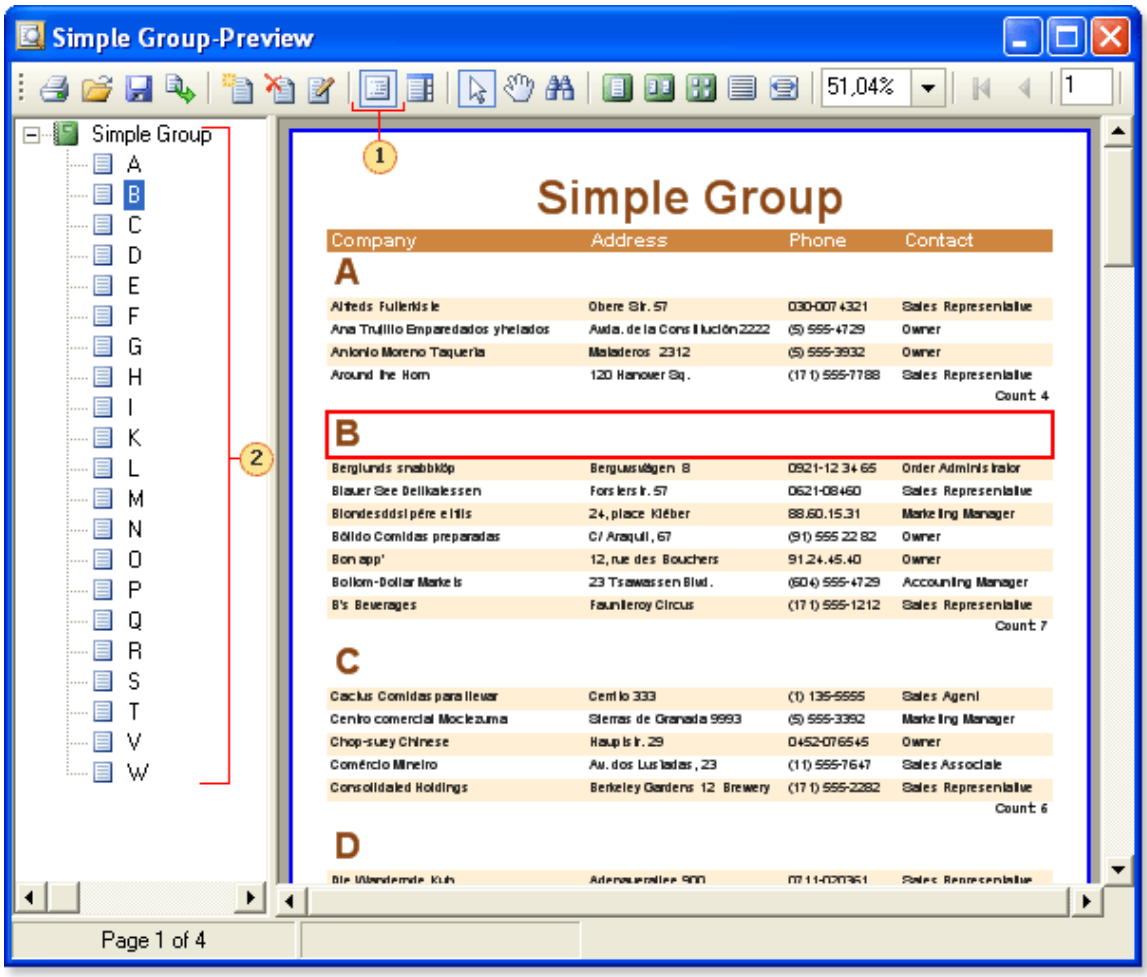
## 2.33.1. Bookmarks

Bookmarks are used to show the structure of a report. Also bookmarks are used to mark the component to make a reference on it using hyperlinks. All components have the **Interaction. Bookmark** property. The expression, specified in this property, is set in the **BookmarkValue** property. Setting occurs when the report rendering. This property is invisible in the **Properties** panel but it can be called from the report code or refer to it from the expression. Before showing a report in the window of preview, Stimulsoft Reports views all components of a rendered report and logs a tree of bookmarks.




### 2.33.1.1. Tree of Bookmarks

The tree of allows viewing the hierarchical structure of a report. For example, two bookmarks were specified: one on the **Master** band and the second on the **Detail** band. In this case, each element of the **Master** band bookmark fits to a node of the bookmarks tree. All elements of bookmarks from the **Detail** bands will be added to the proper node of the **Master** band.

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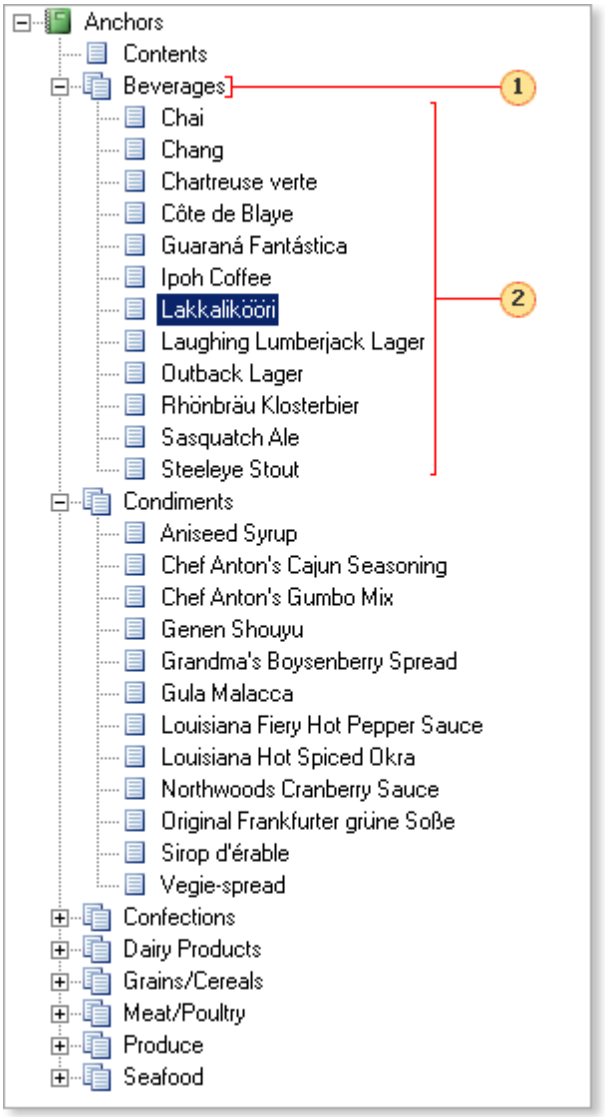


### 2.33.1.2. Bookmarking Using Code

Using the **Interaction.Bookmark** property very complicated structure of bookmarks in a report can be formed. But sometimes it is not enough of this property. For example, it is necessary to add nodes to the tree of bookmarks without using the **Interaction.Bookmark** property. Or the bookmark should be placed on another level of nesting. The **Interaction.Bookmark** property of Stimulsoft Reports can be used. This is an invisible property and it is available only from the code. It is very simple to use this property. For example, to add the bookmark of the first level of nesting the following code can be used:

```
Bookmark.Add("My Bookmark");
```

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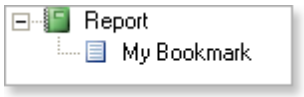
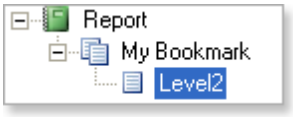
This code will create this bookmark in the tree of bookmarks:



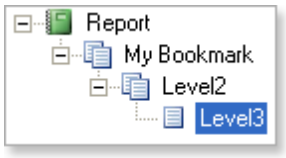

To add a bookmark of the second level to the tree it is necessary write the following code:

```
Bookmark["My Bookmark"].Add("Bookmark Level2");
```




...and for the third level:

```
Bookmark["My Bookmark"]["Level2"].Add("Bookmark Level3");
```




To create all three bookmarks the code sample shown above can be used. Stimulsoft Reports automatically checks presence of each bookmark in a tree and will add ones which should be added. Sometimes it is required to organize navigation using bookmarks. If it is necessary to find components the **Interaction.Bookmark** property of these components should be logged. The value of the **Interaction.Bookmark** property should be the same with the name of the created bookmark. For example, add the bookmark:

```
Bookmark.Add(Customers.CompanyName);
```

So the values of the **Interaction.Bookmark** property should be as follow:

```
{Customers.CompanyName}
```

As a result all components will be marked with bookmark with the company name. The same company name will be added to the report tree. And, when clicking on the bookmark node of the

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report tree, all components will be found.

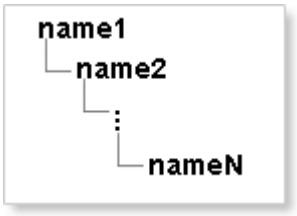
### 2.33.1.3. Creating Bookmarks Using Expression

Using the expression it is possible to form rather complex structure of bookmarks in a report. Even a flat report (containing no subordinate entries) can be represented as a hierarchy of bookmarks. General view of the expression with which one can submit any report as a hierarchy of bookmarks is as follows:

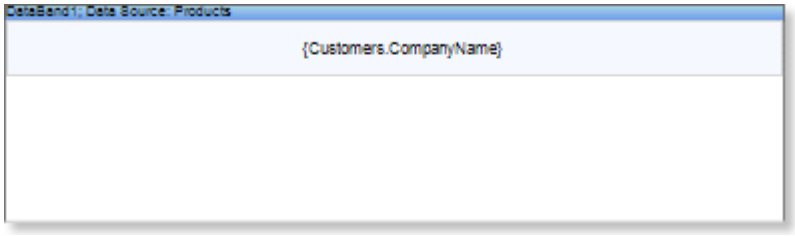
```
%\name1\name2...\nameN
```

where **name1** is a name of a highest level bookmark;
**nameN** is a name of the lowest level bookmark.

The picture below shows the expression hierarchy of a common type:




In the name of the bookmark the following things can be specified: function, expression, data source column, system variables, random names, aliases and more. To make a flat report with the hierarchy of bookmarks, create a single **Data** band, place the band on a text component with the **Company Name** data source column. The picture below shows an example of a report template:




When rendering the report a list of companies will be built, but the tree of bookmarks will not be shown. To show the hierarchy of bookmarks it is necessary to specify an expression (see below an axample):

```
%\{Customers.Country}\{Customers.CompanyName}\{Customers.Phone}
```

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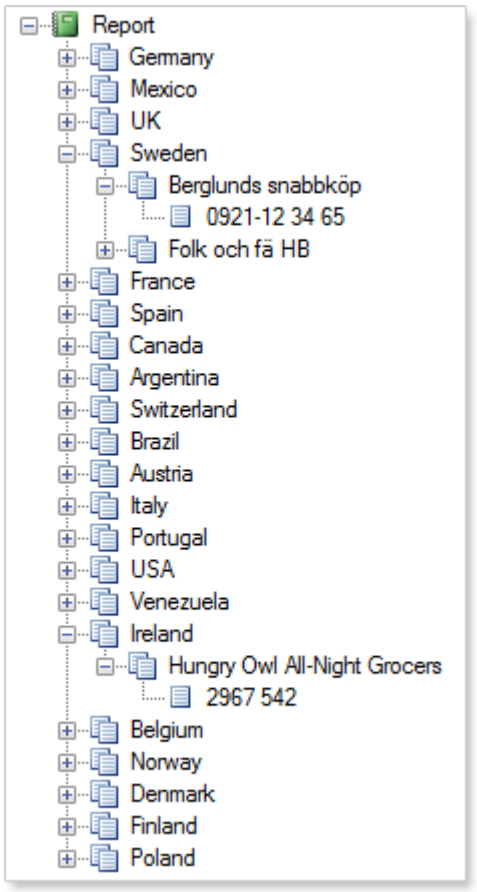
As seen from the expression the hierarchy of bookmarks will be represented in three levels:
The highest level will be represented as bookmarks which correspond to the name of the country.
The middle level will be represented as bookmarks which correspond to the name of the company.
The lowest level will be represented as bookmarks which correspond to the phone number of the company.

The picture below shows an example hierarchy of tabs:




### 2.33.1.4. Bookmark Nesting

Nesting depends on which components generated bookmarks. For example, the page bookmark will always be one level higher then other bookmarks. The bookmark, created with the **GroupHeaderBand** component, is one level higher then the bookmark, created by the **DataBand** component, in this group. In the Master-Detail relation the Master bookmark will enable all Detail bookmarks. For example, we have a report with a group.

```
Group
--Data 1
--Data 2
```

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```
--Data 3
Group
--Data 1
--Data 2
--Data 3
```

In this report groups include data. And bookmarks from the group will include bookmarks from data. As a result we get the same structure in the tree of bookmark. For example:

```
Group 1
--Group 2
----Data 1
----Data 2
----Data 3

Group 1
--Group 2
----Data 1
----Data 2
----Data 3
```

In the tree of bookmarks two nodes will be created. They are **Group 1**, **Group 1**. Each of these nodes will include the **Group 2** node. The **Group 2** nodes will include the **data** nodes. For example, the Master-Detail report:

```
Master-Data
--Data 1
--Data 2
--Data 3
Master-Data
--Data 1
--Data 2
--Data 3
```

In this example the nodes of the Master band form the Master-Data nodes. Each of these nodes will include nodes formed with the Detail band.

## 2.33.2. Hyperlinks

Hyperlinks are used in report navigation. Also it is possible to use the **Interaction.Bookmark** and **Interaction.Tag** properties for this. Hyperlink is set in the **Interaction.Hyperlink** property. When report rendering, the expression, specified in this property, is set in the **Interaction.**

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**HyperlinkValue** property. Setting occurs when report rendering. There are three ways of specifying hyperlinks. It is possible to use one of them.

### 2.33.2.1. Hyperlink to Another Component in Report Using Interaction.Bookmark

In this way you should put the # symbol before the hyperlink text. This makes the report generator to understand that this is a reference inside of a document. If, in the window of preview, a user clicks on this component then the report generator will start to search all bookmarks of this report. If the bookmark name concurs with the hyperlink name (the # symbol is skipped) then this component will be displayed in the window of preview. It is important to remember that a bookmark is shown in the tree of bookmarks.

**Notice.** The **Interaction.Bookmark** property contains the text marker by what this component will be found, when hyperlink processing.

### 2.33.2.2. Hyperlink to Another Component in Report Using Interaction.Tag

In this case it is necessary to add two # symbols before a hyperlink. In this case the search is executed using the **Interaction.Tag** property of components (two # symbols in the text of a hyperlink are skipped). **Interaction.Tag** properties are not shown in the structure of a report. If one want to make navigation without bookmarks showing in the structure of a report then one should use this way.

**Notice.** When using the **Interaction.Tag** property, one should not use the hyperlink to another component in a report in ASP.NET. In ASP.NET, when creating a report, it is impossible to use hyperlink to another component in a report, created using the **Interaction.Tag** property.

### 2.33.2.3. Hyperlink to External Documents

In this way any symbols to a hyperlink should not be added. The string of a hyperlink is directly sent to the OS for processing. For example, for Notepad start just write the following code:

```
notepad.exe
```

For jumping to the address in the Internet:

```
http://www.site.com
```

For email hyperlink:

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```
mailto: mail@domain.com
```

**Notice.** When Web reports rendering, bookmarks can be put only on visible fields. For example, on a text, on an image. Otherwise this hyperlink will be ignored. This principle is to be considered when exporting reports to other formats

## 2.33.3. Reports with Contents

Often it is necessary to create a report with contents. In this case you should create the report structure first and then create the report on the whole. But there is a question. How to output page numbers, because at the moment, when contents rendering, numbers of pages, which elements of contents refer to, are unknown. Use the anchor in this case. The **AddAnchor** method is used for creating an anchor. When creating an anchor, the report generator saves the current page and compares it with the specified anchor. For example:

```
AddAnchor("MyAnchorName")
```

- in this line of the code a new anchor with "**MyAnchorName**" will be created. To get the anchor value it is necessary to use the **GetAnchorPageNumber** method. This method returns the number of a page according to the anchor name. If there is no the anchor with such a name the 0 is returned.

For example:

```
{GetAnchorPageNumber("MyAnchorName")}
```

- this text expression will return the number of a page according to "**MyAnchorName**". So having an anchor name you will know the number of a page on what this anchor was created. Using these two methods a contents building is organized. The contents is built first. Instead of numbers of pages hyperlinks to anchors are pasted. For all components which call a function for getting a page number via anchor you should set the **ProcessAtEnd** property to **true**. It is necessary to do because these components are to be processed in the end of report rendering when all numbers of pages are known.
After the contents has been created the whole report rendering is in process. Anchors are created while report building. After the report has been rendered, instead of hyperlinks, the real page numbers are put on anchors in the content. Let see the anchor usage in a template. Create the **Master-Detail-Detail** report that shows the list of products that is split with categories. For building of such a report you should have two pages. The first page for the contents and the second for the report. On the page of the contents we put two bands. Between them we set the **Master-Detail** link. Then, on the **Detail** band, we put the text component. This **ProcessAtEnd** text components property should be set to **true**.

**Notice.** You should enable the **ProcessAtEnd** property of the text component, which expression returns the number of a page. This property is used for the values of these text components to be processed after report rendering (when numbers of pages are known).

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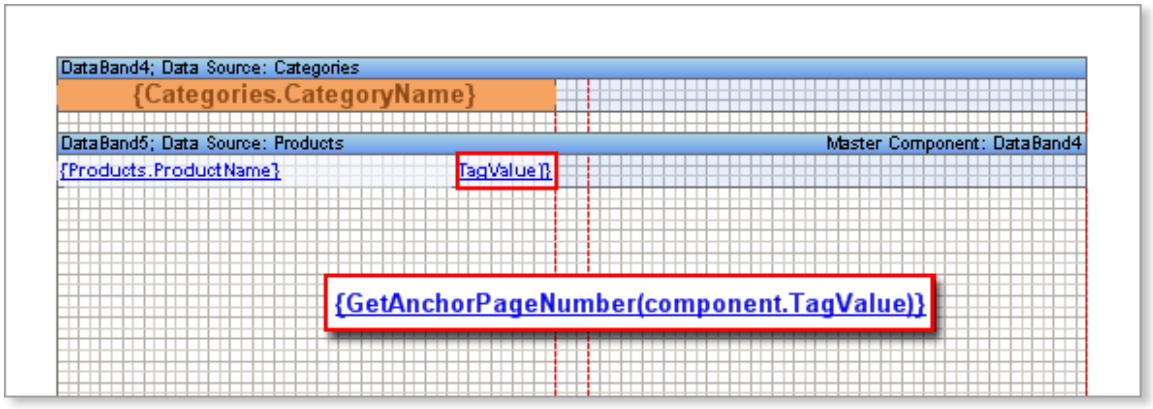
Specify the following text expression of the **Text** property:

```
{GetAnchorPageNumber(component.TagValue)}
```

- this text expression will return the number of a page using the anchor.




As an anchor name the value of the **Tag** property is used. For filling the **Tag** property the following expression is used:

```
{Products.ProductName}
```

- in this expression the name of a product is used. Therefore, it is impossible to use the expression below:

```
{GetAnchorPageNumber(Products.ProductName)}
```

The component that contains an expression will be processed in the end of report building. So the value of the **Products.ProductName** field will be equal for all strings – the last in a list. That is why it is necessary to remember the value of the **Products.ProductName** field for every string when the content is being built. For this use the **Tag** property. On the second page the report is built. In the **Rendering** property of the **DataBand** component (used for the content building) the **AddAnchor** method is called. This method will return the current page in the moment of its calling.

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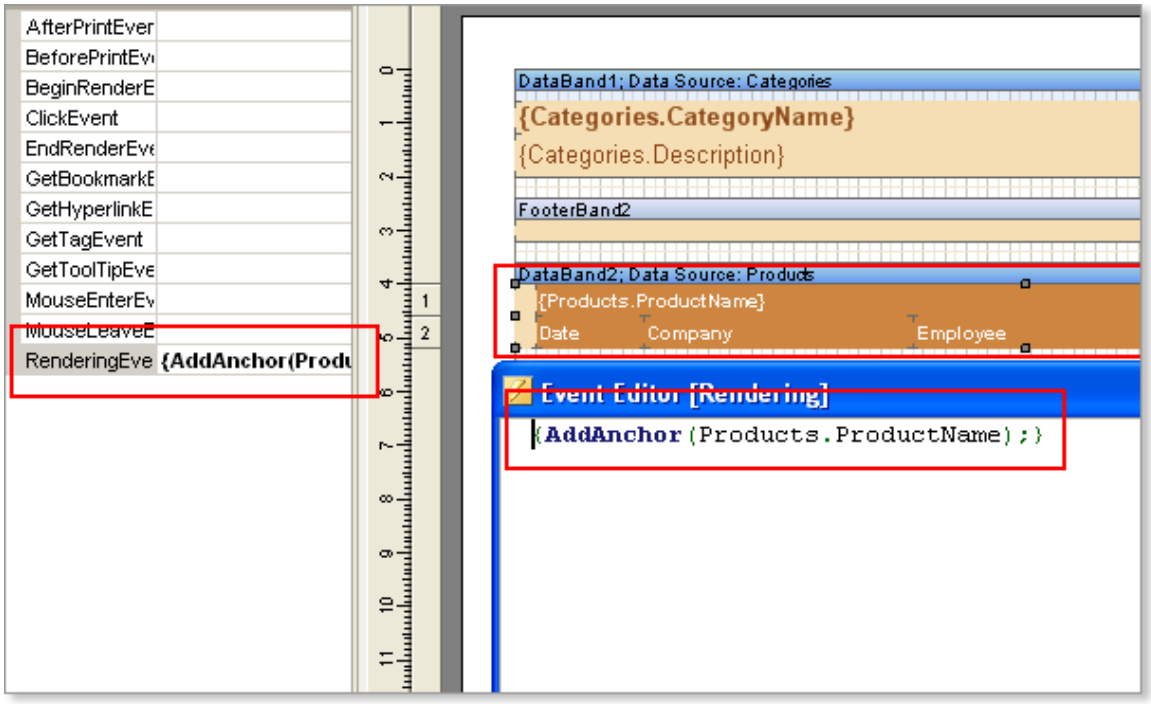
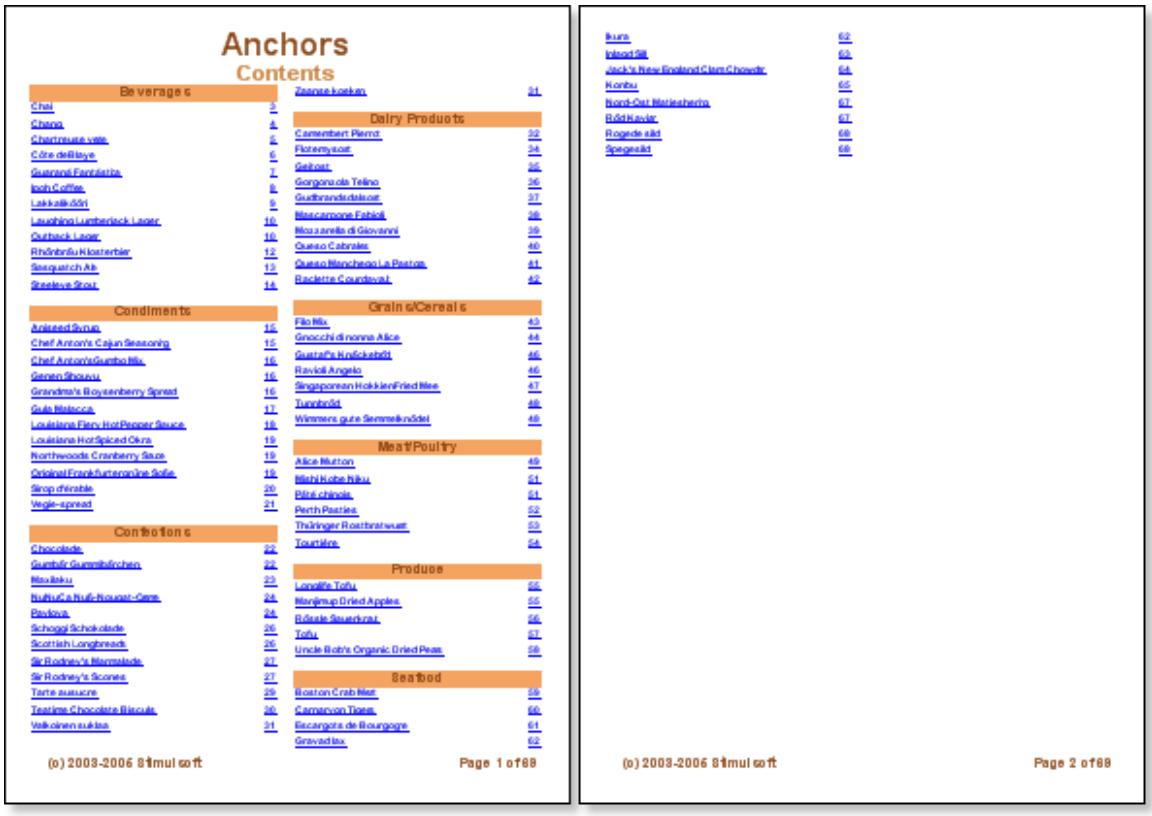



The anchor name is the value of the **Products.ProductName** field. As a result, the page number is rendered first. Then the second page is rendered and numbers of pages are saved. After the report rendering the report generator engine returns to the first page and numbers all pages.



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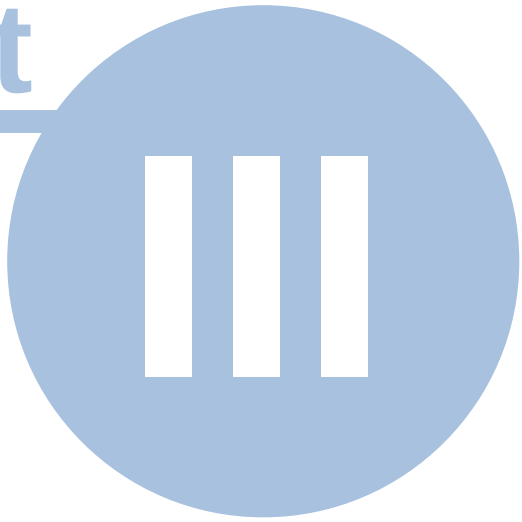
# Part



# Getting Started

# 3. Getting Started

This section discusses basic steps for creating various reports and showing them in a viewer. These examples demonstrate basic functionality of the reporting tool, and provide you with step-by-step instructions on how to create reports. We suggest that you review the following tutorials first.

## 3.1. Simple List Report

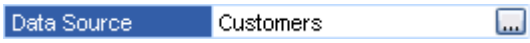
Do the following steps to create a simple list report:

1. Run the designer;
2. Connect data:
   2.1. Create **New Connection**;
   2.2. Create **New Data Source**;

3. Put a **DataBand** on a page of a report template.

4. Edit **DataBand**:
   4.1. Align the **DataBand** by height;
   4.2. Change values of band properties. For example, set the **Can Break** property to **true**, if you wish the data band to be broken;
   4.3. Change the **DataBand** background;
   4.4. Enable **Borders** for the **DataBand**, if required;
   4.5. Change the border color.

5. Define the data source for the **DataBand** using the **Data Source** property:




6. Put text components with expressions in the **DataBand**. Where expression is a reference to the data field. For example, put two text components with expressions: **{Customers.CompanyName}** and **{Customers.City}**;
7. Edit **Text** and **TextBox** component:
   7.1. Drag and drop the text component in the **DataBand**;
   7.2. Change parameters of the text font: size, type, color;
   7.3. Align the text component by width and height;
   7.4. Change the background of the text component;
   7.5. Align text in the text component;
   7.6. Change the value of properties of the text component. For example, set the **Word Wrap**

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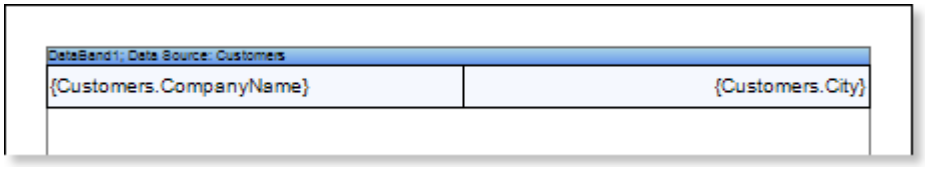
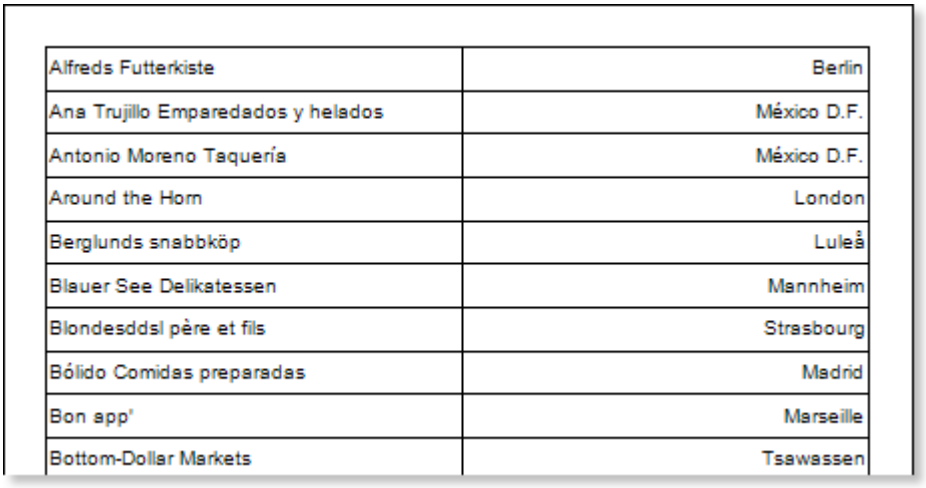
property to **true**, if you need a text to be wrapped;
7.7. Enable **Borders** for the text component, if required.
7.8. Change the border color.

The picture below shows a report template with the list:




8. Click the **Preview** button or invoke the **Viewer**, pressing **F5** or clicking the **Preview** menu item. After rendering all references to data fields will be changed on data form specified fields. Data will be output in consecutive order from the database that was defined for this report. The amount of copies of the **DataBand** in the rendered report will be the same as the amount of data rows in the database. The picture below shows a sample of a simple list report:



| | |
|---|---|
| Alfreds Futterkiste | Berlin |
| Ana Trujillo Emparedados y helados | México D.F. |
| Antonio Moreno Taquería | México D.F. |
| Around the Horn | London |
| Berglunds snabbköp | Luleå |
| Blauer See Delikatessen | Mannheim |
| Blondesddsl père et fils | Strasbourg |
| Bólido Comidas preparadas | Madrid |
| Bon app' | Marseille |
| Bottom-Dollar Markets | Tsawassen |

9. Go back to the report template;
10. If needed, add other bands to the report template, for example, **ReportTitleBand** and **ReportSummaryBand**;
11. Edit these bands:
    11.1. Align them by height;
    11.2. Change values of properties, if required;
    11.3. Change the background of bands;
    11.4. Enable **Borders**, if required;
    11.5. Set the border color.

The picture below shows a simple list report template with **ReportTitleBand** and **ReportSummaryBand:**

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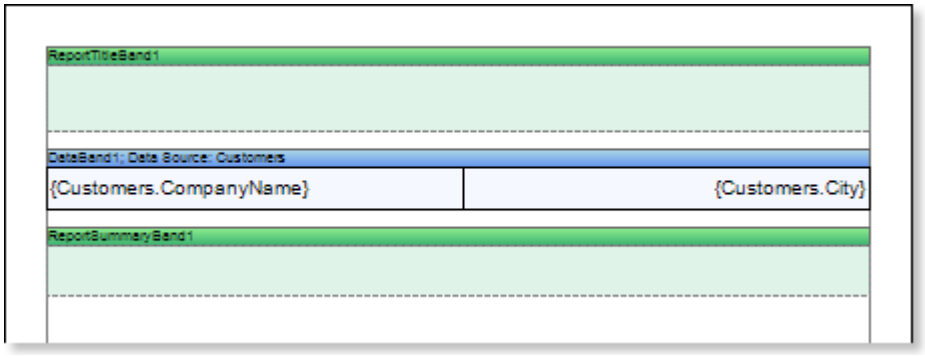
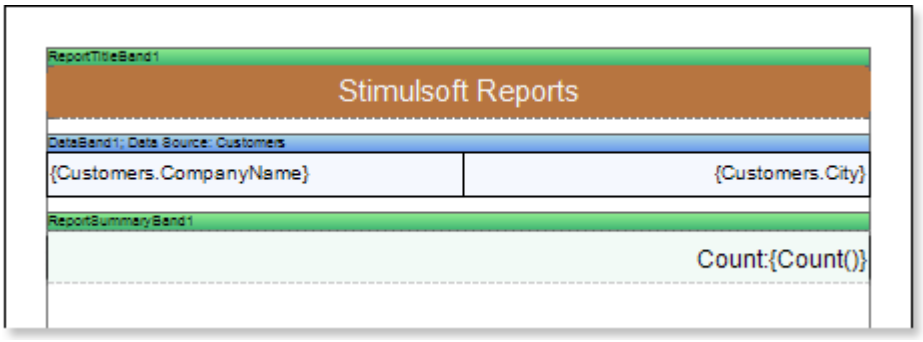



12. Put text components with expressions in the these bands. The expression in the text component is a title in the **ReportTitleBand**, and a summary in the **ReportSummaryBand**.
13. Edit text and text components:
    13.1. Drag and drop the text component in the band;
    13.2. Change font options: size, type, color;
    13.3. Align text component by height and width;
    13.4. Change the background of the text component;
    13.5. Align text in the text component;
    13.6. Change values of text component properties, if required;
    13.7. Enable **Borders** of the text component, if required;
    13.8. Set the border color.

The picture below shows a sample of the simple list report template:




14. Click the **Preview** button or invoke the **Viewer**, pressing **F5** or clicking the **Preview** menu item . After rendering all references to data fields will be changed on data form specified fields. Data will be output in consecutive order from the database that was defined for this report. The amount of copies of the **DataBand** in the rendered report will be the same as the amount of data rows in the database. The picture below shows a sample of a simple list report with the title and summary:

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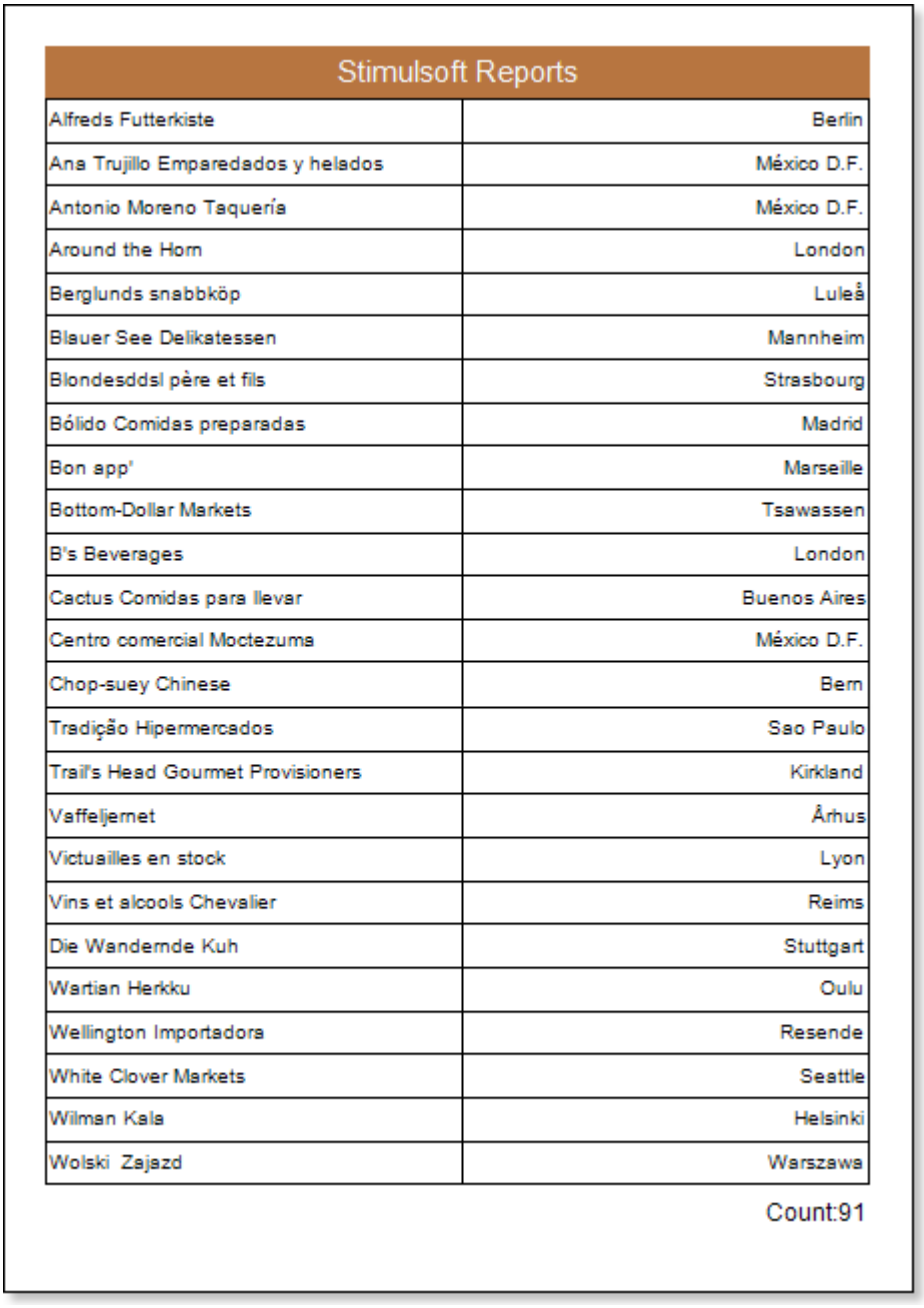

| Stimulsoft Reports | |
|---|---|
| Alfreds Futterkiste | Berlin |
| Ana Trujillo Emparedados y helados | México D.F. |
| Antonio Moreno Taquería | México D.F. |
| Around the Horn | London |
| Berglunds snabbköp | Luleå |
| Blauer See Delikatessen | Mannheim |
| Blondesddsl père et fils | Strasbourg |
| Bólido Comidas preparadas | Madrid |
| Bon app' | Marseille |
| Bottom-Dollar Markets | Tsawassen |
| B's Beverages | London |
| Cactus Comidas para llevar | Buenos Aires |
| Centro comercial Moctezuma | México D.F. |
| Chop-suey Chinese | Bern |
| Tradição Hipermercados | Sao Paulo |
| Trail's Head Gourmet Provisioners | Kirkland |
| Vaffeljernet | Århus |
| Victuailles en stock | Lyon |
| Vins et alcools Chevalier | Reims |
| Die Wandernde Kuh | Stuttgart |
| Wartian Herkku | Oulu |
| Wellington Importadora | Resende |
| White Clover Markets | Seattle |
| Wilman Kala | Helsinki |
| Wolski Zajazd | Warszawa |

Count:91

## Adding styles

1. Go back to the report template;
2. Select **DataBand**;
3. Change values of **Even style** and **Odd style** properties. If values of these properties are not set, then select the **Edit Styles** in the list of values of these properties and, using **Style Designer**, create a new style. The picture below shows the **Style Designer**:

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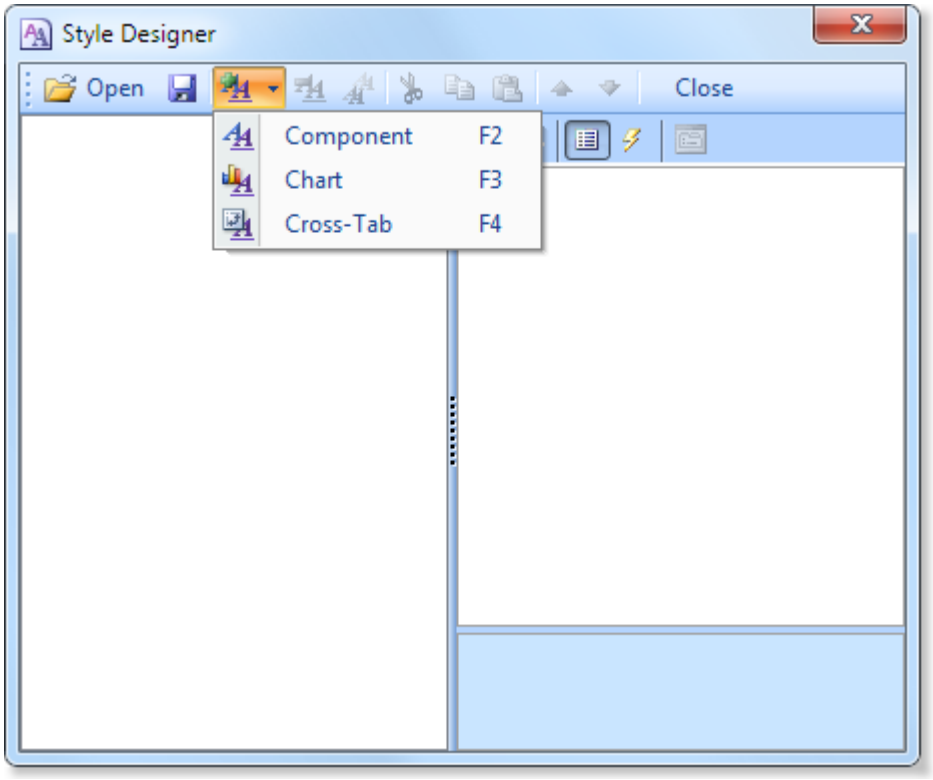
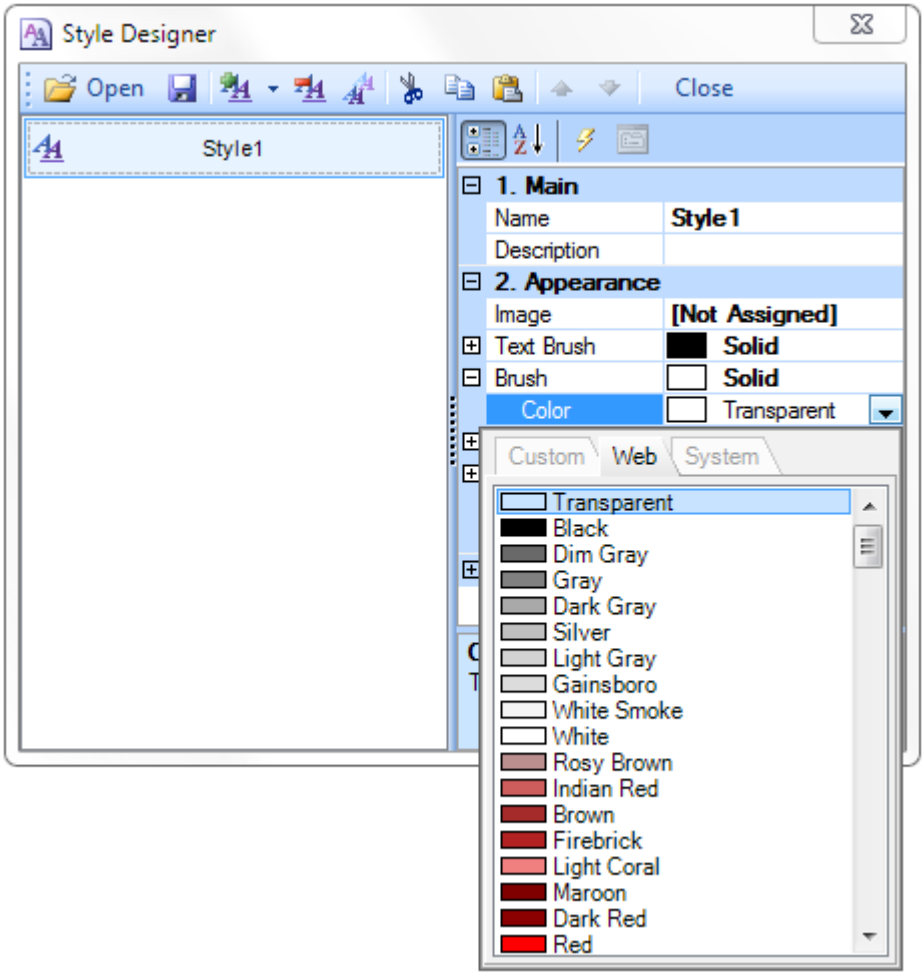



Click the **Add Style** button to start creating a style. Select **Component** from the drop down list. Set the **Brush.Color** property to change the background color of a row. The picture below shows a sample of the **Style Designer** with the list of values of the **Brush.Color** property:

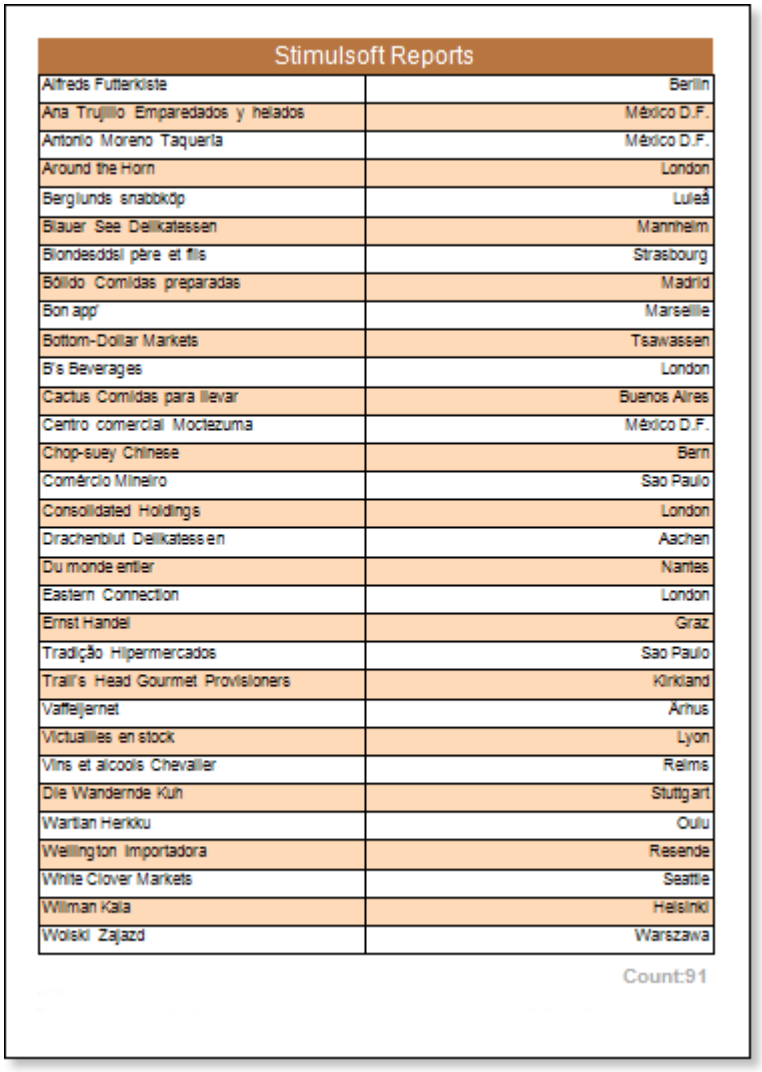
© 2003-2011 Stimulsoft




Click **Close**. Then a new value in the list of **Even style** and **Odd style** properties (a style of a list of odd and even rows) will appear.

4. To render the report, click the **Preview** button or invoke the **Viewer**, pressing **F5** or clicking the **Preview** menu item. The picture below shows a sample of a rendered simple list report with alternative color of rows:

© 2003-2011 Stimulsoft



| Stimulsoft Reports | |
|---|---|
| Alfreds Futterkiste | Berlin |
| Ana Trujillo Emparedados y helados | México D.F. |
| Antonio Moreno Taquería | México D.F. |
| Around the Horn | London |
| Berglunds snabbköp | Luleå |
| Blauer See Delikatessen | Mannheim |
| Blondesddsl père et fils | Strasbourg |
| Bólido Comidas preparadas | Madrid |
| Bon app' | Marseille |
| Bottom-Dollar Markets | Tsawassen |
| B's Beverages | London |
| Cactus Comidas para llevar | Buenos Aires |
| Centro comercial Moctezuma | México D.F. |
| Chop-suey Chinese | Bern |
| Comércio Mineiro | Sao Paulo |
| Consolidated Holdings | London |
| Drachenblut Delikatessen | Aachen |
| Du monde entier | Nantes |
| Eastern Connection | London |
| Ernst Handel | Graz |
| Tradição Hipermercados | Sao Paulo |
| Trail's Head Gourmet Provisioners | Kirkland |
| Vaffeljernet | Århus |
| Victuailles en stock | Lyon |
| Vins et alcools Chevalier | Reims |
| Die Wandernde Kuh | Stuttgart |
| Wartian Herkku | Oulu |
| Wellington Importadora | Resende |
| White Clover Markets | Seattle |
| Wilman Kala | Helsinki |
| Wolski Zajazd | Warszawa |

Count:91

## 3.2. Master-Detail Report

Do the following steps to create a master-detail report:

1. Run the designer;
2. Connect data:
   2.1. Create **New Connection**;
   2.2. Create **New Data Source**;

3. Create **Relation** between data sources. If the relation will not be created and/or the **Relation** property of the **Detail** data source will not be filled, then, for **Master** entry, all **Detail** entries will be output;
4. Put two **DataBands** on a page of a report template**.**

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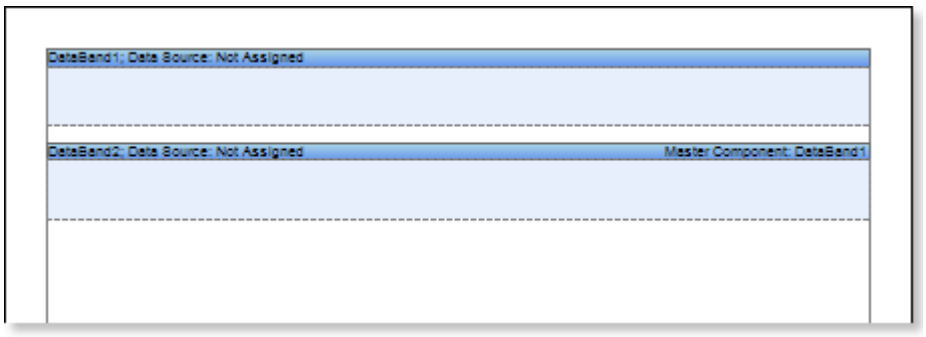


5. Edit **DataBand1** and **DataBand2**:
   5.1. Align them by height;
   5.2. Change values of required properties. For example, if to set the **PrintIfDetailEmpty** property of the **DataBand1** that is the **Master** component in the **Master-Detail** report to **true**, if it is necessary all **Master** entries be printed in any case, even if **Detail** entries not present. And set the **CanShrink** property of the **DataBand2** that is the **Detail** component in the **Master-Detail** report to **true**, if it is necessary to shrink this band;
   5.3. Change the background color of the **DataBand**;
   5.4. Enable **Borders** of the band, if required;

6. Define data sources for **DataBands**, a define the **Master** component. In our tutorial, the **Master** component is the **DataBand1**. This means that in the **Data Setup** window of the lower **DataBand2**, the **DataBand1** will be specified as the Master component in the **Master Component** tab;
7. Fill the **Data Relation** property of the **DataBand**, that is the **Detail** components. In our case this **DataBand2**:

| Data Relation | Categories |
|---|---|

8. Put text components with expressions on **DataBands**. Where expression is a reference to the data field. For example, put a text component with **{Customers.CompanyName}** expression on the **DataBand1**. Put a text component with **{Products.ProductName}** and **{Products.UnitPrice}** expressions in the **DataBand2**;
9. Edit **Text** and **TextBox** component:
   9.1. Drag and drop the text component in **DataBands**;
   9.2. Change parameters of the text font: size, type, color;
   9.3. Align the text component by width and height;
   9.4. Change the background of the text component;
   9.5. Align text in the text component;
   9.6. Change the value of properties of the text component. For example, set the **Word Wrap** property to **true**, if you need a text to be wrapped;
   9.7. Enable **Borders** for the text component, if required.
   9.8. Change the border color.

The picture below shows the master-details report template.

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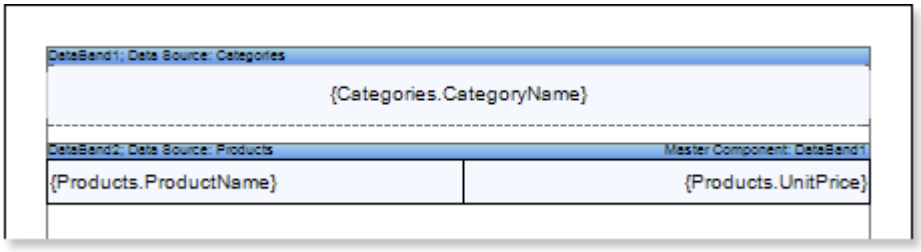
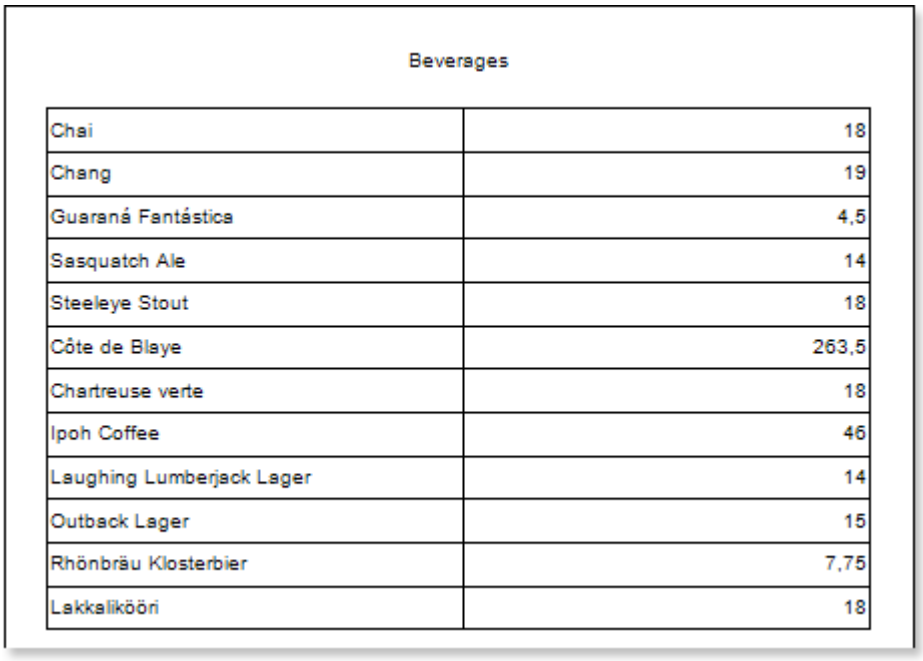



10. Click the **Preview** button or invoke the **Viewer**, pressing **F5** or clicking the **Preview** menu item. After rendering all references to data fields will be changed on data form specified fields. Data will be output in consecutive order from the database that was defined for this report. The amount of copies of the **DataBand** in the rendered report will be the same as the amount of data rows in the database. The picture below shows a sample of the master-detail report:



Beverages

| | |
|---|---|
| Chai | 18 |
| Chang | 19 |
| Guaraná Fantástica | 4,5 |
| Sasquatch Ale | 14 |
| Steeleye Stout | 18 |
| Côte de Blaye | 263,5 |
| Chartreuse verte | 18 |
| Ipoh Coffee | 46 |
| Laughing Lumberjack Lager | 14 |
| Outback Lager | 15 |
| Rhönbräu Klosterbier | 7,75 |
| Lakkalikööri | 18 |

11. Go back to the report template;
12. If needed, add other bands to the report template, for example, **HeaderBand** and **FooterBand**;
13. Edit these bands:
    13.1. Align them by height;
    13.2. Change values of properties, if required;
    13.3. Change the background of bands;
    13.4. Enable **Borders**, if required;
    13.5. Set the border color.

The picture below shows a simple list report template with **HeaderBand** and **FooterBand**:

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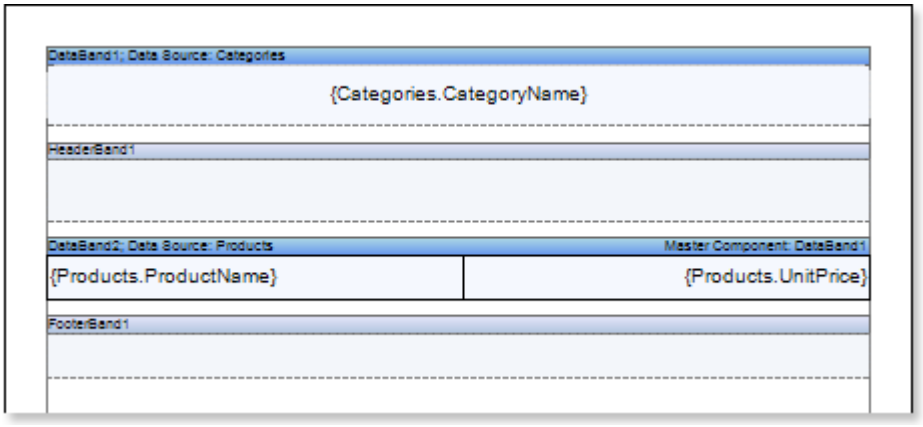
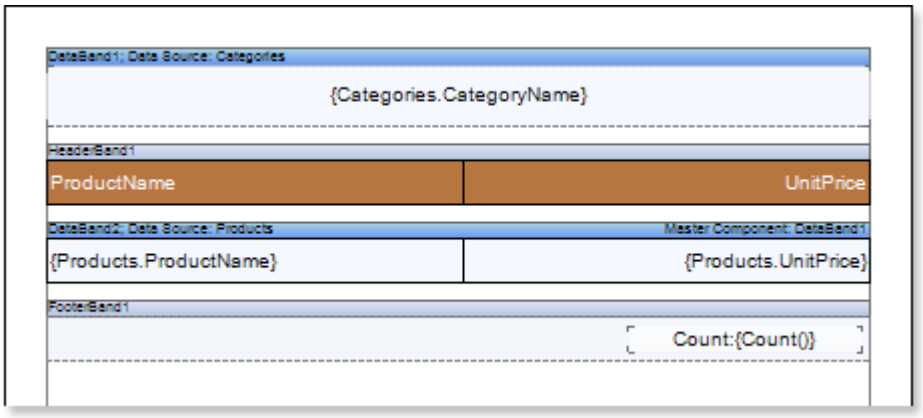



14. Put text components with expressions in the these bands. The expression in the text component is a header in the **HeaderBand**, and a footer in the **FooterBand**.
15. Edit text and text components:
    15.1. Drag and drop the text component in the band;
    15.2. Change font options: size, type, color;
    15.3. Align text component by height and width;
    15.4. Change the background of the text component;
    15.5. Align text in the text component;
    15.6. Change values of text component properties, if required;
    15.7. Enable **Borders** of the text component, if required;
    15.8. Set the border color.

The picture below shows a sample of the master-detail report template:




16. Click the **Preview** button or invoke the **Viewer**, pressing **F5** or clicking the **Preview** menu item . After rendering all references to data fields will be changed on data form specified fields. Data will be output in consecutive order from the database that was defined for this report. The amount of copies of the **DataBand** in the rendered report will be the same as the amount of data rows in the database. The picture below shows a sample of the master-detail report with header and footer:

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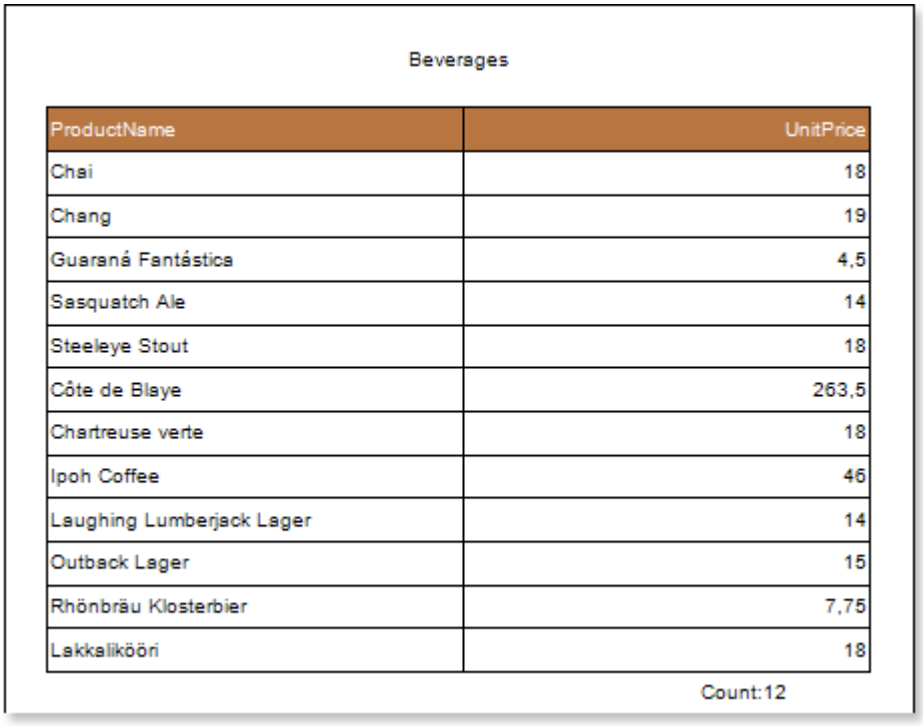

Beverages

| ProductName | UnitPrice |
|---|---|
| Chai | 18 |
| Chang | 19 |
| Guaraná Fantástica | 4,5 |
| Sasquatch Ale | 14 |
| Steeleye Stout | 18 |
| Côte de Blaye | 263,5 |
| Chartreuse verte | 18 |
| Ipoh Coffee | 46 |
| Laughing Lumberjack Lager | 14 |
| Outback Lager | 15 |
| Rhönbräu Klosterbier | 7,75 |
| Lakkalikööri | 18 |

Count:12

## Adding styles

1. Go back to the report template;
2. Select **DataBand**;
3. Change values of **Even style** and **Odd style** properties. If values of these properties are not set, then select the **Edit Styles** in the list of values of these properties and, using **Style Designer**, create a new style. The picture below shows the **Style Designer**:

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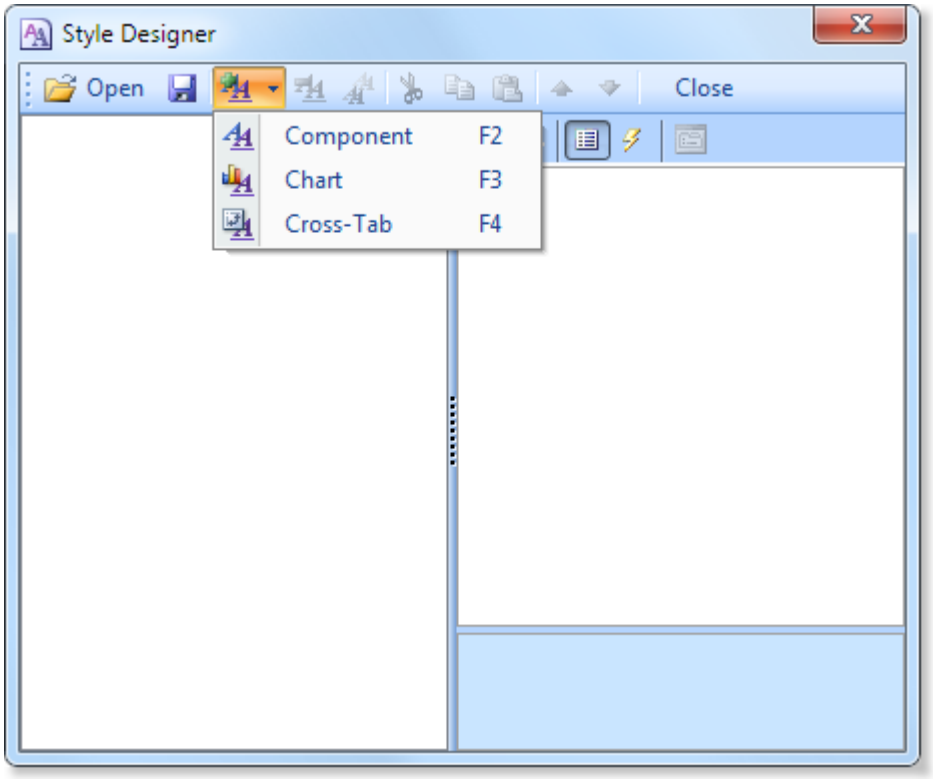
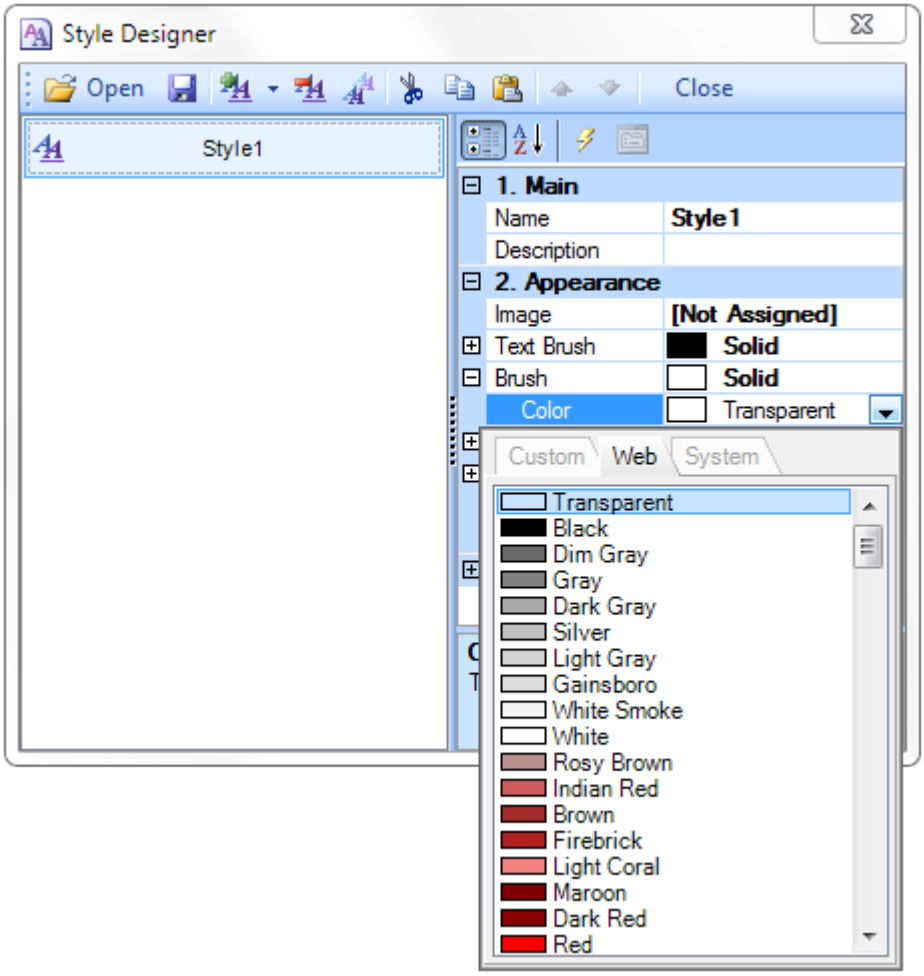



Click the **Add Style** button to start creating a style. Select **Component** from the drop down list. Set the **Brush.Color** property to change the background color of a row. The picture below shows a sample of the **Style Designer** with the list of values of the **Brush.Color** property**:**

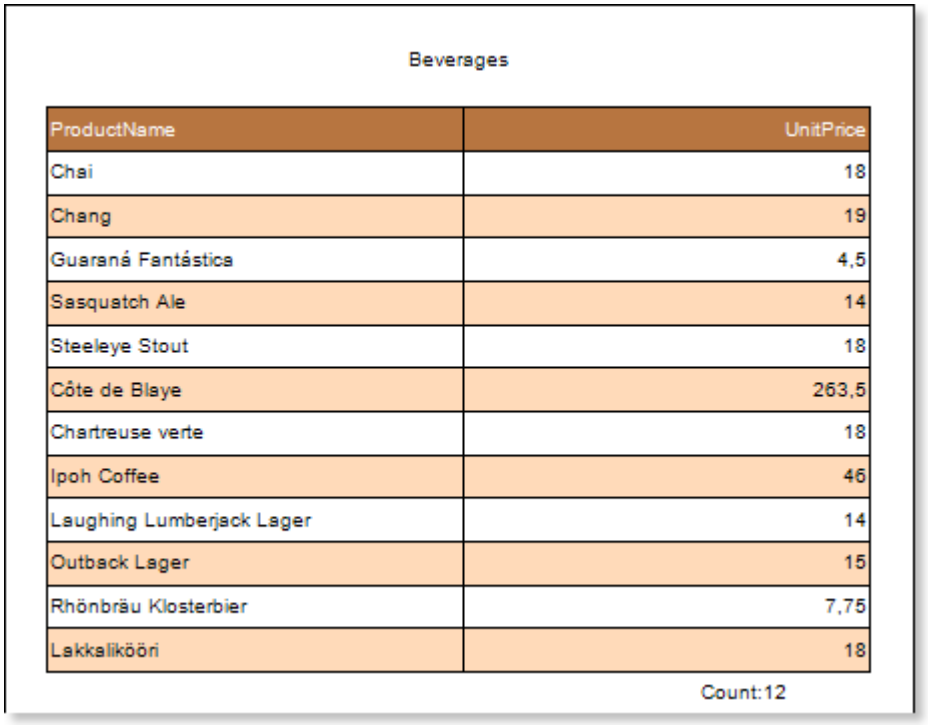
© 2003-2011 Stimulsoft




Click **Close**. Then in the list of **Even style** and **Odd style** properties a new value (a style of a list of odd and even rows).

4. To render the report, click the **Preview** button or invoke the **Viewer**, pressing **F5** or clicking the **Preview** menu item. The picture below shows a sample of a rendered master-detail report with alternative color of rows:

© 2003-2011 Stimulsoft



Beverages

| ProductName | UnitPrice |
|---|---|
| Chai | 18 |
| Chang | 19 |
| Guaraná Fantástica | 4,5 |
| Sasquatch Ale | 14 |
| Steeleye Stout | 18 |
| Côte de Blaye | 263,5 |
| Chartreuse verte | 18 |
| Ipoh Coffee | 46 |
| Laughing Lumberjack Lager | 14 |
| Outback Lager | 15 |
| Rhönbräu Klosterbier | 7,75 |
| Lakkalikööri | 18 |

Count:12

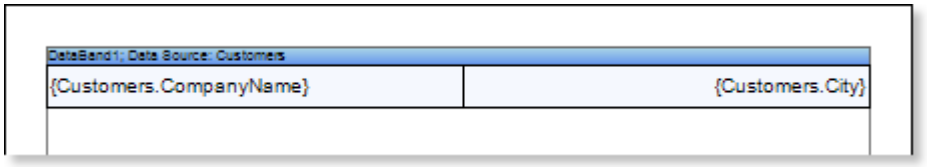
If to select the **DataBand1**, that is the **Master** component in the **Master-Detail** report, then it is possible to change values of **Even style**
and **Odd style** properties. In such a case, alternative row color will be applied only for **Master** entries.

## 3.3. Report with Grouping

Do the following steps to create a report with grouping:

1. Run the designer;
2. Connect data:
   2.1. Create **New Connection**;
   2.2. Create **New Data Source**;

3. Create a report or open already created one. For example, we can take a simple list report created in the chapter "Simple List Report".



| DataBand1; Data Source: Customers | |
|---|---|
| {Customers.CompanyName} | {Customers.City} |

4. Add **GroupHeaderBand** and **GroupFooterBand** to the report template. The

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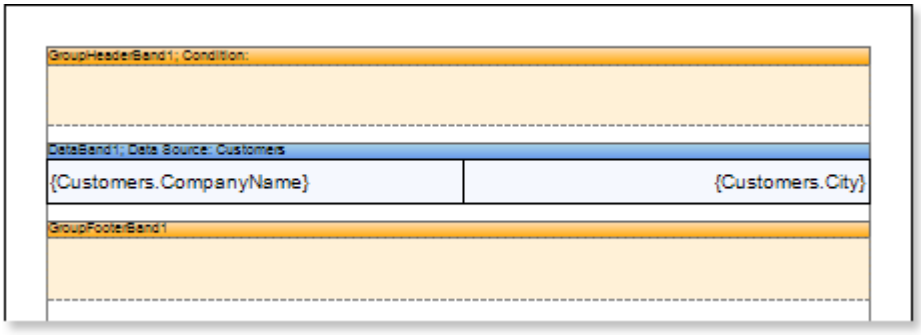
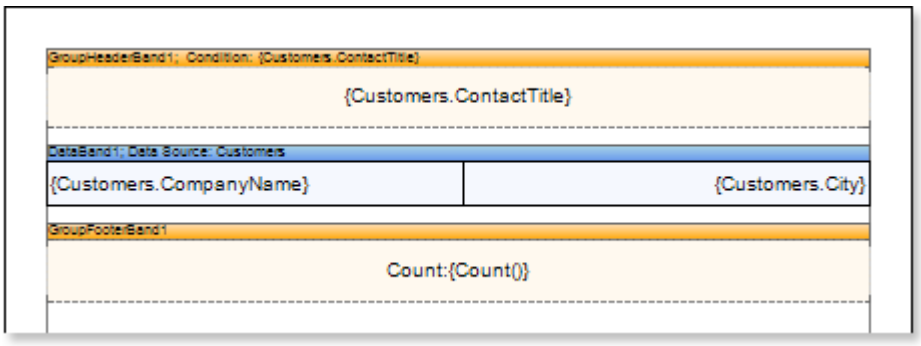
**GroupHeaderBand** should be placed higher than the **DataBand** to what it is related to. The **GroupFooterBand** is placed under the **Data to** what **GroupHeader** is related. Each **GroupFooter** corresponds to a specified **GroupHeader**. The **GroupFooter** band will not output without **GroupHeader**. The picture below shows a report template with added **GroupHeaderBand** and **GroupFooterBand)**.




5. Edit **GroupHeaderBand** and **GroupFooterBand**:
   5.1. Align them be height;
   5.2. Change values of properties according to requirements. For example, set the **KeepGroupHeaderTogether** property for the **GroupHeaderBand to true**, it is necessary to keep the group header with the group. And for the **GroupFooterBand** set the **KeepFooterTogether** to **true**, if it is required to keep the footer with the group;
   5.3. Set the background of the **GroupHeaderBand**;
   5.4. Enable **Borders** of the **DataBand**, if required;

6. Set the condition data grouping in the report using the **Condition** property of the **GroupHeader** band. Condition of grouping can be set by setting the expression or by selecting the data column from the data source. In our tutorial, define the **{Customers.ContactTitle}** expression in the condition of grouping.
7. Put a text component in the **GroupHeaderBand** and put the **{Customers.ContactTitle}** expression into this text component. Put a text component in the **GroupFooterBand** and put the **{Count()}** expression into this text component. The **{Count()}** function will count summary by the amount of entries in each group. The picture below shows a report template with the condition of grouping set, and text components placed in **GroupHeaderBand** and **GroupFooterBand:**




8. Edit expressions and text components:
   8.1. Drag and drop the text component in **GroupHeaderBand** and **GroupFooterBand**;
   8.2. Change parameters of the text font: size, type, color;
   8.3.. Align the text component by width and height;

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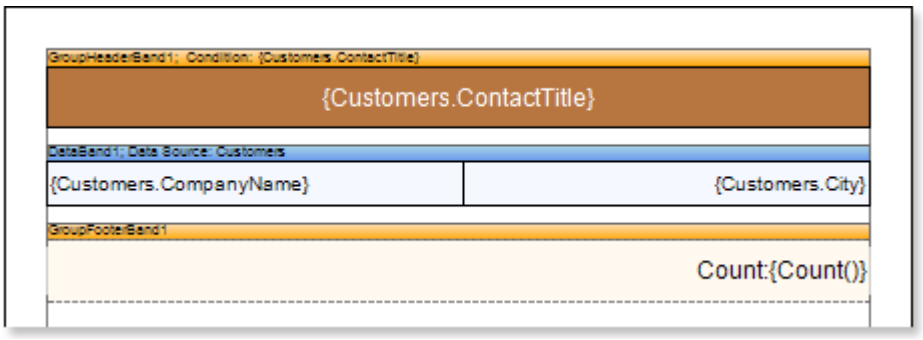
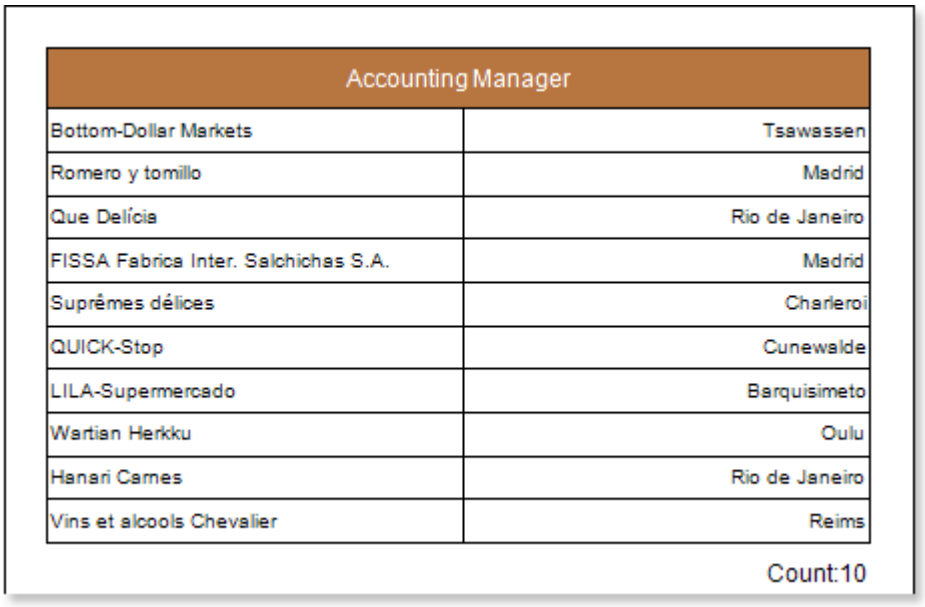
8.4. Change the background of the text component;
8.5. Align text in the text component;
8.6. Change the value of properties of the text component. For example, set the **Word Wrap** property to **true**, if you need a text to be wrapped;
8.7. Enable **Borders** for the text component, if required.
8.8. Change the border color.

The picture below shows a sample of the edited report template with grouping:




9. Click the **Preview** button or invoke the **Viewer**, pressing **F5** or clicking the **Preview** menu item. After rendering all references to data fields will be changed on data form specified fields. Data will be output in consecutive order from the database that was defined for this report. The amount of copies of the **DataBand** in the rendered report will be the same as the amount of data rows in the database. The picture below shows a sample of the report with grouping:



| Accounting Manager | |
|---|---|
| Bottom-Dollar Markets | Tsawassen |
| Romero y tomillo | Madrid |
| Que Delícia | Rio de Janeiro |
| FISSA Fabrica Inter. Salchichas S.A. | Madrid |
| Suprêmes délices | Charleroi |
| QUICK-Stop | Cunewalde |
| LILA-Supermercado | Barquisimeto |
| Wartian Herkku | Oulu |
| Hanari Carnes | Rio de Janeiro |
| Vins et alcools Chevalier | Reims |

Count:10

## Adding styles

1. Go back to the report template;
2. Select **DataBand**;
3. Change values of **Even style** and **Odd style** properties. If values of these properties are not set,

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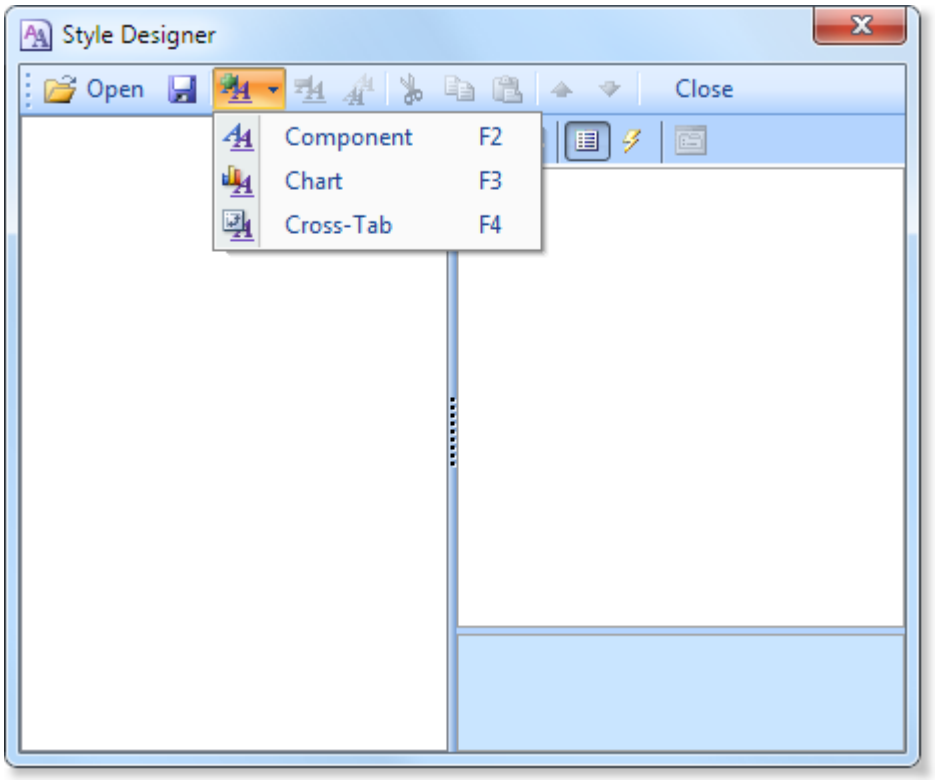
then select the **Edit Styles** in the list of values of these properties and, using **Style Designer**, create a new style. The picture below shows the **Style Designer**:




Click the **Add Style** button to start creating a style. Select **Component** from the drop down list. Set the **Brush.Color** property to change the background color of a row. The picture below shows a sample of the **Style Designer** with the list of values of the **Brush.Color** property:

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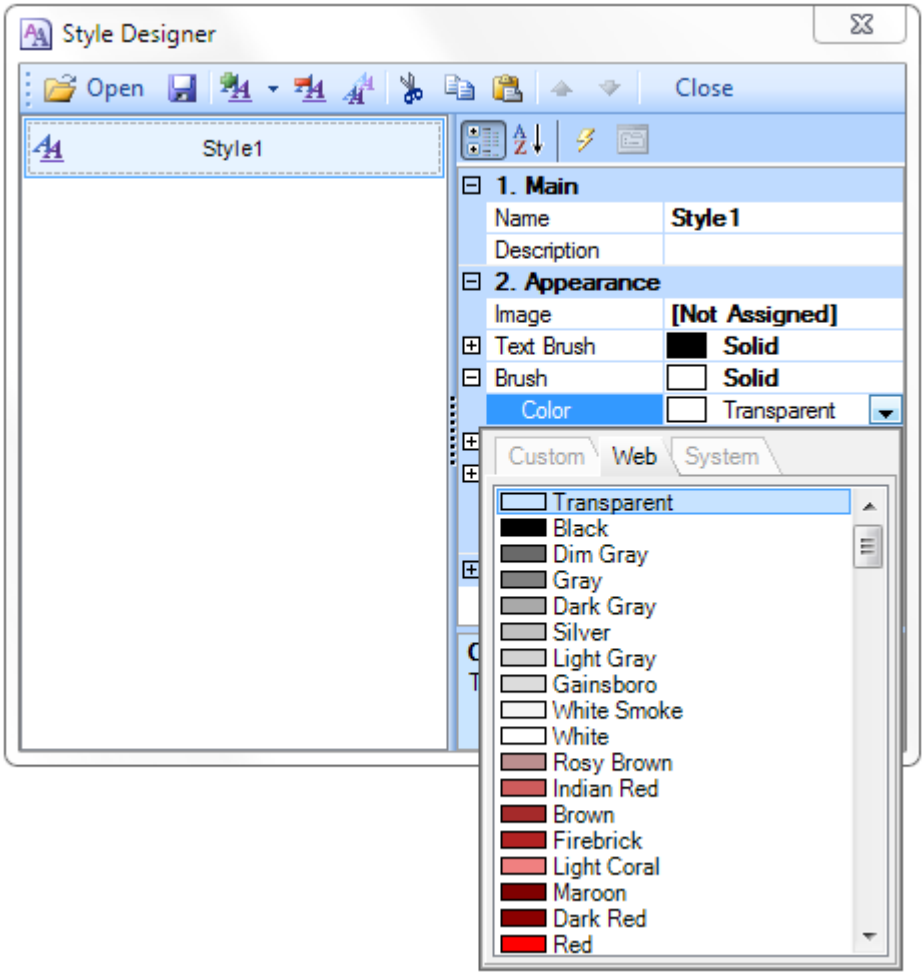


Click **Close**. Then in the list of **Even style** and **Odd style** properties a new value (a style of a list of odd and even rows).

4. To render the report, click the **Preview** button or invoke the **Viewer**, pressing **F5** or clicking the **Preview** menu item. The picture below shows a sample of a rendered report with grouping and alternative color of rows:

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| Accounting Manager | |
|---|---|
| Bottom-Dollar Markets | Tsawassen |
| Romero y tomillo | Madrid |
| Que Delícia | Rio de Janeiro |
| FISSA Fabrica Inter. Salchichas S.A. | Madrid |
| Suprêmes délices | Charleroi |
| QUICK-Stop | Cunewalde |
| LILA-Supermercado | Barquisimeto |
| Wartian Herkku | Oulu |
| Hanari Carnes | Rio de Janeiro |
| Vins et alcools Chevalier | Reims |

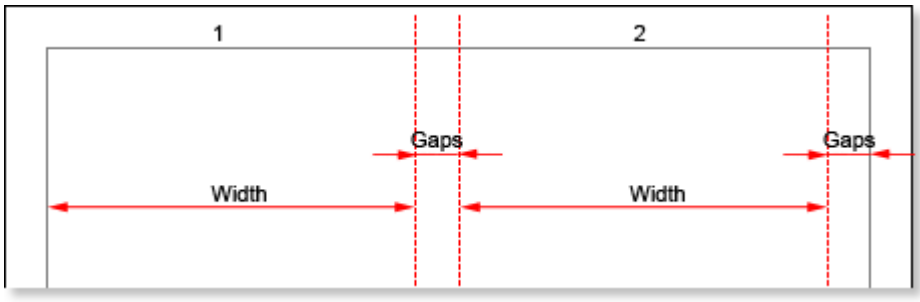
Count:10

## 3.4. Report with Columns on Page

Do the following steps to create a report with columns on a page:

1. Run the designer;
2. Connect data:
   2.1. Create **New Connection**;
   2.2. Create **New Data Source**;

3. Set column options: the number of columns, column width, and column gap. For example, set the number of columns equal to **2**, with the gap equal to **1**. The column width is created automatically. The picture below shows a sample of the report template with two columns:




4. Put **DataBand** on a page.

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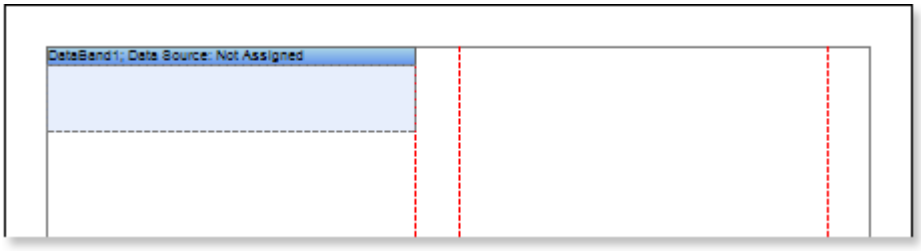
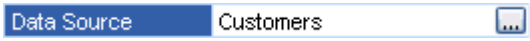
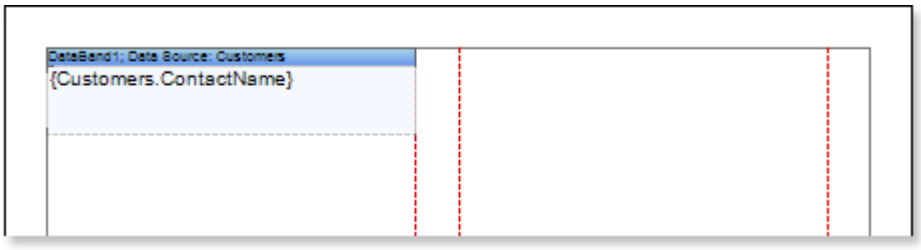



5. Edit **DataBand**:
   5.1. Align the **DataBand** by height;
   5.2. Change values of band properties. For example, set the **Can Break** property to **true**, if you wish the data band to be broken;
   5.3. Change the **DataBand** background;
   5.4. Enable **Borders** for the **DataBand**, if required;
   5.5. Change the border color.

6. Define the data source for the **DataBand** using the **Data Source** property**:**

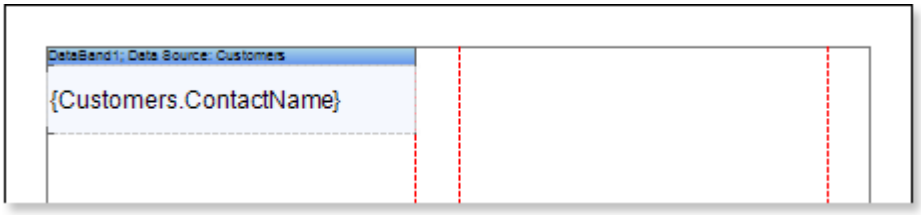



7. Put text components with expressions on the **DataBand**. Where expression is a reference to the data field. For example, put two text components with expressions: **{Customers.ContactName}**.




8. Edit expressions and text components:
   8.1. Drag and drop the text component in **DataBand**;
   8.2. Change parameters of the text font: size, type, color;
   8.3. Align the text component by width and height;
   8.4. Change the background of the text component;
   8.5. Align text in the text component;
   8.6. Change the value of properties of the text component. For example, set the **Word Wrap** property to **true**, if you need a text to be wrapped;
   8.7. Enable **Borders** for the text component, if required.
   8.8. Change the border color.

The picture below shows a report template with edited text component:

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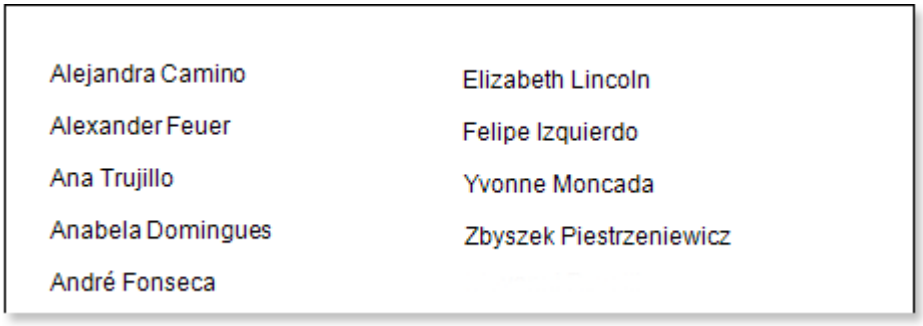
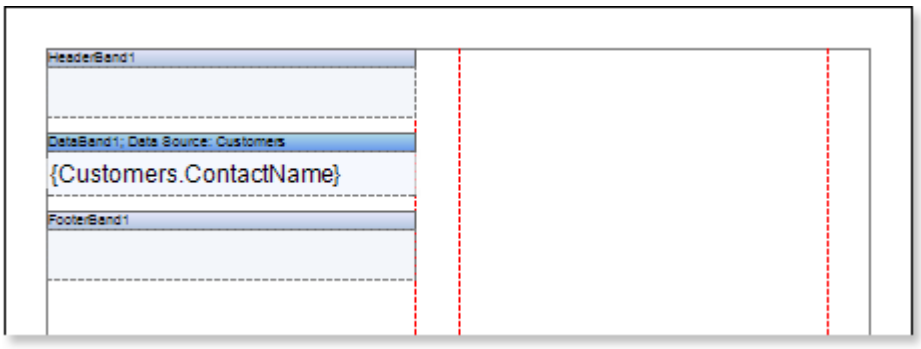
9. Click the **Preview** button or invoke the **Viewer**, pressing **F5** or clicking the **Preview** menu item. After rendering all references to data fields will be changed on data form specified fields. Data will be output in consecutive order from the database that was defined for this report. The amount of copies of the **DataBand** in the rendered report will be the same as the amount of data rows in the database. The picture below shows a sample of the report with two columns on a page:




Step **3** and **4** can be changed in sequence of doing. So you may put **DataBand** first and then set the column options on page.

10. Go back to the report template;
11. If needed, add other bands to the report template, for example, **HeaderBand** and **FooterBand**;




12. Edit these bands:
    12.1. Align them by height;
    12.2. Change values of properties, if required;
    12.3. Change the background of bands;
    12.4. Enable **Borders**, if required;
    12.5. Set the border color.

13. Put text components with expressions in the these bands. The expression in the text component is a header in the **HeaderBand**, and a footer in the **FooterBand**.

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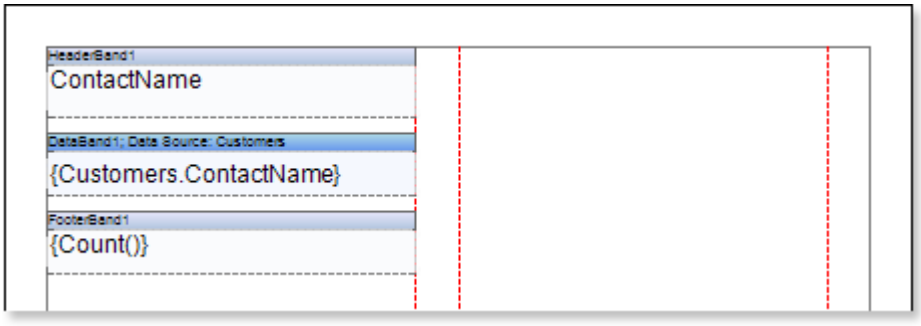
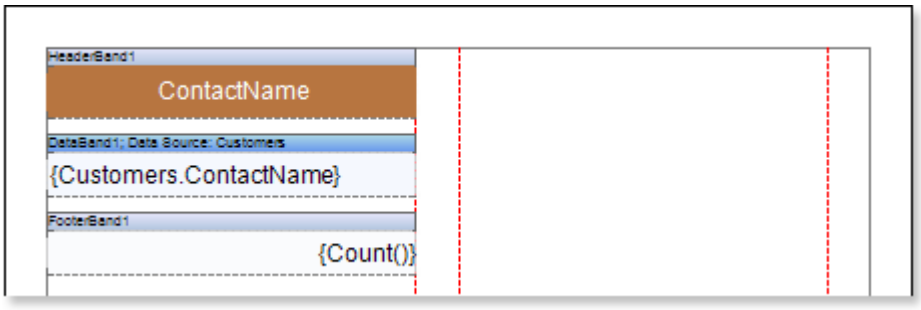
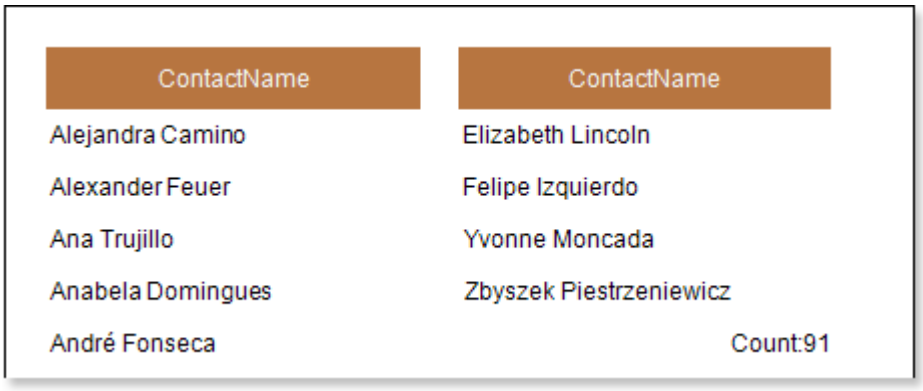



14. Edit text and text components:
    14.1. Drag and drop the text component in the band;
    14.2. Change font options: size, type, color;
    14.3. Align text component by height and width;
    14.4. Change the background of the text component;
    14.5. Align text in the text component;
    14.6. Change values of text component properties, if required;
    14.7. Enable **Borders** of the text component, if required;
    14.8. Set the border color.

The picture below shows a sample of the report with two columns on a page:




15. Click the **Preview** button or invoke the **Viewer**, pressing **F5** or clicking the **Preview** menu item . After rendering all references to data fields will be changed on data form specified fields. Data will be output in consecutive order from the database that was defined for this report. The amount of copies of the **DataBand** in the rendered report will be the same as the amount of data rows in the database. The picture below shows a sample of the report with a header and a footer:

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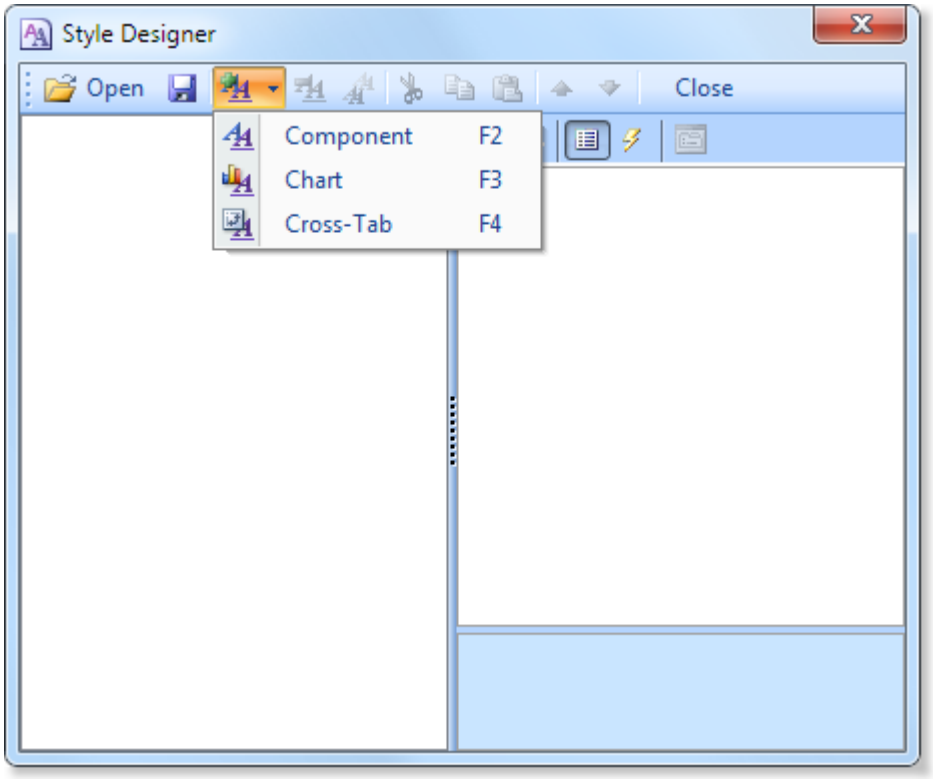
## Adding styles

1. Go back to the report template;
2. Select **DataBand**;
3. Change values of **Even style** and **Odd style** properties. If values of these properties are not set, then select the **Edit Styles** in the list of values of these properties and, using **Style Designer**, create a new style. The picture below shows the **Style Designer**:




Click the **Add Style** button to start creating a style. Select **Component** from the drop down list. Set the **Brush.Color** property to change the background color of a row. The picture below shows a sample of the **Style Designer** with the list of values of the **Brush.Color** property:

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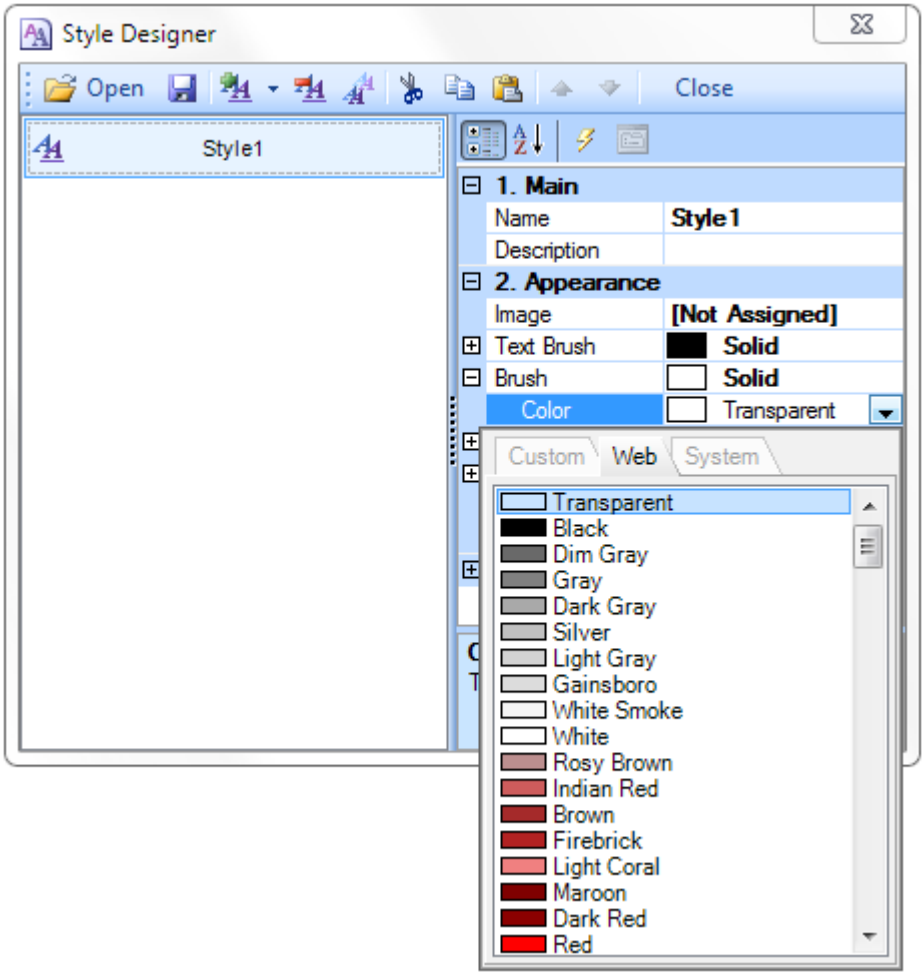
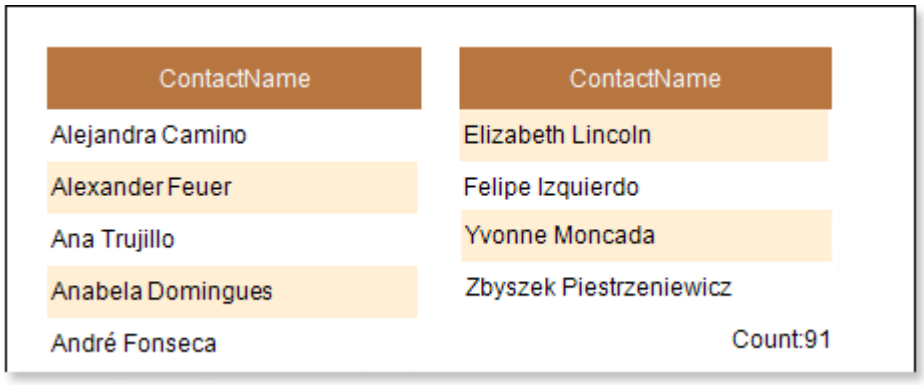



Click **Close**. Then in the list of **Even style** and **Odd style** properties a new value (a style of a list of odd and even rows).

4. To render the report, click the **Preview** button or invoke the **Viewer**, pressing **F5** or clicking the **Preview** menu item. The picture below shows a sample of a rendered report with columns on a page and alternative color of rows:

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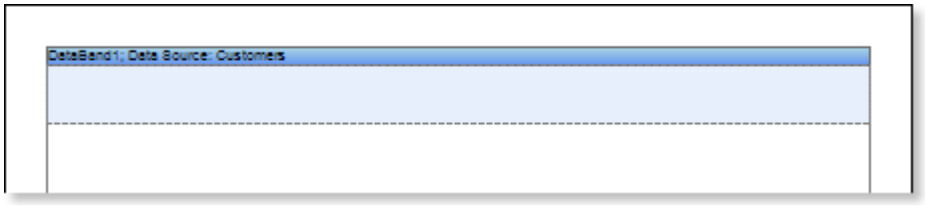
## 3.5. Report with Columns in DataBand

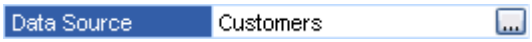
Do the following steps to create a report with columns in DataBand:

1. Run the designer;
2. Connect data:
   2.1. Create **New Connection**;
   2.2. Create **New Data Source**;

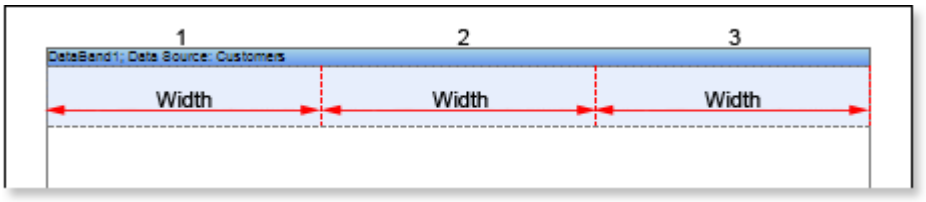
3. Put a **DataBand** on a page of a report template.



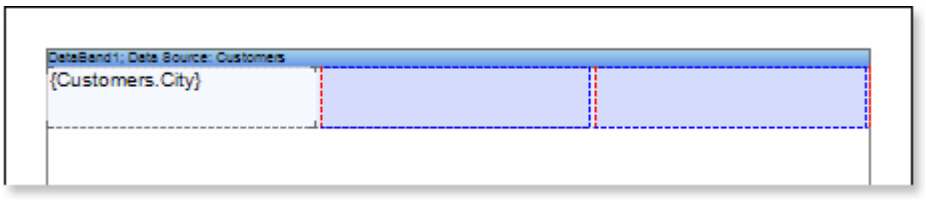

4. Define the data source for the **DataBand** using, for example, the **Data Source** property**:**




5. Set column options: the number of columns, column width, and column gap. For example, set the number of columns equal to **3**, with the gap equal to **0**. The column width is created automatically. The picture below shows a sample of the report template with two columns, placed in the **DataBand**:




6. Put a text component with expressions on the **DataBand**. Where expression is a reference to the data field. For example, put one text component with the **{Customers.City}** expression.




7. Edit expressions and text components:
   7.1. Drag and drop the text component in **DataBand**;

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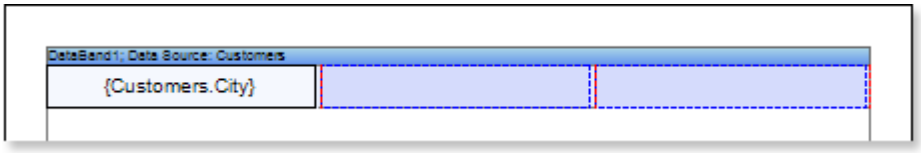
7.2. Change parameters of the text font: size, type, color;
7.3. Align the text component by width and height;
7.4. Change the background of the text component;
7.5. Align text in the text component;
7.6. Change the value of properties of the text component. For example, set the **Word Wrap** property to **true**, if you need a text to be wrapped;
7.7. Enable **Borders** for the text component, if required.
7.8. Change the border color.




8. Set the columns direction of data output using the **Column Direction** property. Read about this property in section Report Internals -> Columns.
9. Click the **Preview** button or invoke the **Viewer**, pressing **F5** or clicking the **Preview** menu item. After rendering all references to data fields will be changed on data form specified fields. Data will be output in consecutive order from the database that was defined for this report. The amount of copies of the **DataBand** in the rendered report will be the same as the amount of data rows in the database. The picture below shows samples of reports with columns rendered using different values of the **Column Direction** property.

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Down Then Across

| | | |
|---|---|---|
| 1.Aachen | 24.Elgin | 47.Madrid |
| 2.Albuquerque | 25.Eugene | 48.Madrid |
| 3.Anchorage | 26.Frankfurt a.M. | 49.Madrid |
| 4.Århus | 27.Genève | 50.Mannheim |
| 5.Barcelona | 28.Graz | 51.Marseille |
| 6.Barquisimeto | 29.Helsinki | 52.México D.F. |
| 7.Bergamo | 30.I. de Margarita | 53.México D.F. |
| 8.Berlin | 31.Kirkland | 54.México D.F. |
| 9.Bern | 32.Kobenhavn | 55.México D.F. |
| 10.Boise | 33.Köln | 56.México D.F. |
| 11.Brácke | 34.Lander | 57.Montréal |
| 12.Brandenburg | 35.Leipzig | 58.München |
| 13.Bruxelles | 36.Lille | 59.Münster |
| 14.Buenos Aires | 37.Lisboa | 60.Nantes |
| 15.Buenos Aires | 38.Lisboa | 61.Nantes |
| 16.Buenos Aires | 39.London | 62.Oulu |
| 17.Butte | 40.London | 63.Paris |
| 18.Campinas | 41.London | 64.Paris |
| 19.Caracas | 42.London | 65.Portland |
| 20.Charleroi | 43.London | 66.Portland |
| 21.Cork | 44.London | 67.Reggio Emilia |
| 22.Cowes | 45.Luleå | 68.Reims |
| 23.Cunewalde | 46.Lyon | 69.Resende |

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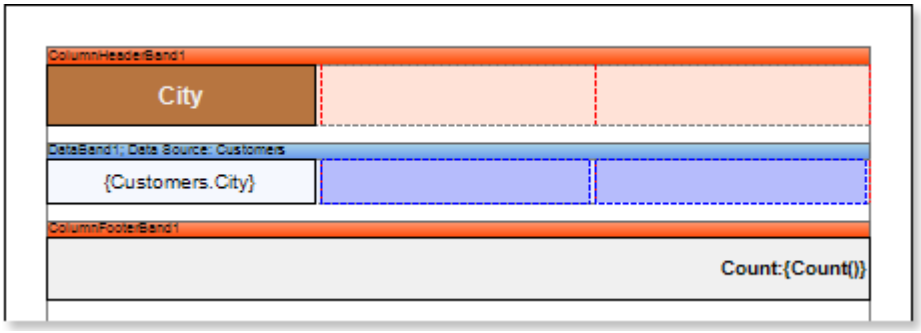
Across Then Down

| | | |
|---|---|---|
| 1.Aachen | 2.Albuquerque | 3.Anchorage |
| 4.Århus | 5.Barcelona | 6.Barquisimeto |
| 7.Bergamo | 8.Berlin | 9.Bern |
| 10.Boise | 11.Bräcke | 12.Brandenburg |
| 13.Bruxelles | 14.Buenos Aires | 15.Buenos Aires |
| 16.Buenos Aires | 17.Butte | 18.Campinas |
| 19.Caracas | 20.Charleroi | 21.Cork |
| 22.Cowes | 23.Cunewalde | 24.Elgin |
| 25.Eugene | 26.Frankfurt a.M. | 27.Genève |
| 28.Graz | 29.Helsinki | 30.I. de Margarita |
| 31.Kirkland | 32.Kobenhavn | 33.Köln |
| 34.Lander | 35.Leipzig | 36.Lille |
| 37.Lisboa | 38.Lisboa | 39.London |
| 40.London | 41.London | 42.London |
| 43.London | 44.London | 45.Luleå |
| 46.Lyon | 47.Madrid | 48.Madrid |
| 49.Madrid | 50.Mannheim | 51.Marseille |
| 52.México D.F. | 53.México D.F. | 54.México D.F. |
| 55.México D.F. | 56.México D.F. | 57.Montréal |
| 58.München | 59.Münster | 60.Nantes |
| 61.Nantes | 62.Oulu | 63.Paris |
| 64.Paris | 65.Portland | 66.Portland |
| 67.Reggio Emilia | 68.Reims | 69.Resende |

10. Go back to the report template;
11. If needed, add other bands to the report template, for example, **ColumnHeaderBand** and **ColumnFooterBand**.

12. Edit these bands:
    12.1. Align them by height;
    12.2. Change values of properties, if required;
    12.3. Change the background of bands;
    12.4. Enable **Borders**, if required;
    12.5. Set the border color.
13. Put text components with expressions in the these bands. Where expression of the text component in the **ColumnHeaderBand** is the column name and the expression of the text component in the **ColumnFooterBand** is the data footer.

14. Edit **Text** and **TextBox** component:
    14.1. Drag and drop the text component in **ColumnHeaderBand** and **ColumnFooterBand**;
    14.2. Change parameters of the text font: size, type, color;
    14.3. Align the text component by width and height;
    14.4. Change the background of the text component;
    14.5. Align text in the text component;
    14.6. Change the value of properties of the text component. For example, set the **Word Wrap** property to **true**, if you need a text to be wrapped;
    14.7. Enable **Borders** for the text component, if required.
    14.8. Change the border color.




15. Click the **Preview** button or invoke the **Viewer**, pressing **F5** or clicking the **Preview** menu item . After rendering all references to data fields will be changed on data form specified fields. Data will be output in consecutive order from the database that was defined for this report. The amount of copies of the **DataBand** in the rendered report will be the same as the amount of data rows in the database. The picture below shows samples of reports with column headers.

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Down Then Across

| City | City | City |
|---|---|---|
| 1.Aachen | 22.Cowes | 43.London |
| 2.Albuquerque | 23.Cunewalde | 44.London |
| 3.Anchorage | 24.Elgin | 45.Luleå |
| 4.Århus | 25.Eugene | 46.Lyon |
| 5.Barcelona | 26.Frankfurt a.M. | 47.Madrid |
| 6.Barquisimeto | 27.Genève | 48.Madrid |
| 7.Bergamo | 28.Graz | 49.Madrid |
| 8.Berlin | 29.Helsinki | 50.Mannheim |
| 9.Bern | 30.I. de Margarita | 51.Marseille |
| 10.Boise | 31.Kirkland | 52.México D.F. |
| 11.Bräcke | 32.Kobenhavn | 53.México D.F. |
| 12.Brandenburg | 33.Köln | 54.México D.F. |
| 13.Bruxelles | 34.Lander | 55.México D.F. |
| 14.Buenos Aires | 35.Leipzig | 56.México D.F. |
| 15.Buenos Aires | 36.Lille | 57.Montréal |
| 16.Buenos Aires | 37.Lisboa | 58.München |
| 17.Butte | 38.Lisboa | 59.Münster |
| 18.Campinas | 39.London | 60.Nantes |
| 19.Caracas | 40.London | 61.Nantes |
| 20.Charleroi | 41.London | 62.Oulu |
| 21.Cork | 42.London | 63.Paris |

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Across Then Down

| City | City | City |
|---|---|---|
| 1.Aachen | 2.Albuquerque | 3.Anchorage |
| 4.Århus | 5.Barcelona | 6.Barquisimeto |
| 7.Bergamo | 8.Berlin | 9.Bern |
| 10.Boise | 11.Bräcke | 12.Brandenburg |
| 13.Bruxelles | 14.Buenos Aires | 15.Buenos Aires |
| 16.Buenos Aires | 17.Butte | 18.Campinas |
| 19.Caracas | 20.Charleroi | 21.Cork |
| 22.Cowes | 23.Cunewalde | 24.Elgin |
| 25.Eugene | 26.Frankfurt a.M. | 27.Genève |
| 28.Graz | 29.Helsinki | 30.I. de Margarita |
| 31.Kirkland | 32.Kobenhavn | 33.Köln |
| 34.Lander | 35.Leipzig | 36.Lille |
| 37.Lisboa | 38.Lisboa | 39.London |
| 40.London | 41.London | 42.London |
| 43.London | 44.London | 45.Luleå |
| 46.Lyon | 47.Madrid | 48.Madrid |
| 49.Madrid | 50.Mannheim | 51.Marseille |
| 52.México D.F. | 53.México D.F. | 54.México D.F. |
| 55.México D.F. | 56.México D.F. | 57.Montréal |
| 58.München | 59.Münster | 60.Nantes |
| 61.Nantes | 62.Oulu | 63.Paris |

## Adding styles

1. Go back to the report template;
2. Select **DataBand**;
3. Change values of **Even style** and **Odd style** properties. If values of these properties are not set, then select the **Edit Styles** in the list of values of these properties and, using **Style Designer**, create a new style. The picture below shows the **Style Designer**:

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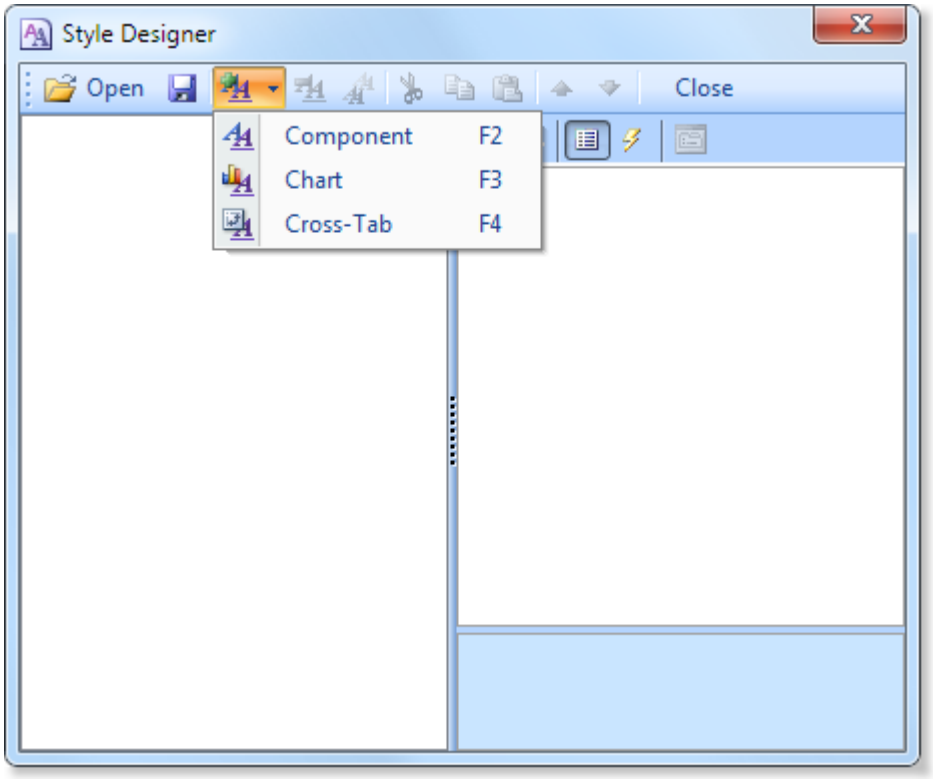


Click the **Add Style** button to start creating a style. Select **Component** from the drop down list. Set the **Brush.Color** property to change the background color of a row. The picture below shows a sample of the **Style Designer** with the list of values of the **Brush.Color** property:

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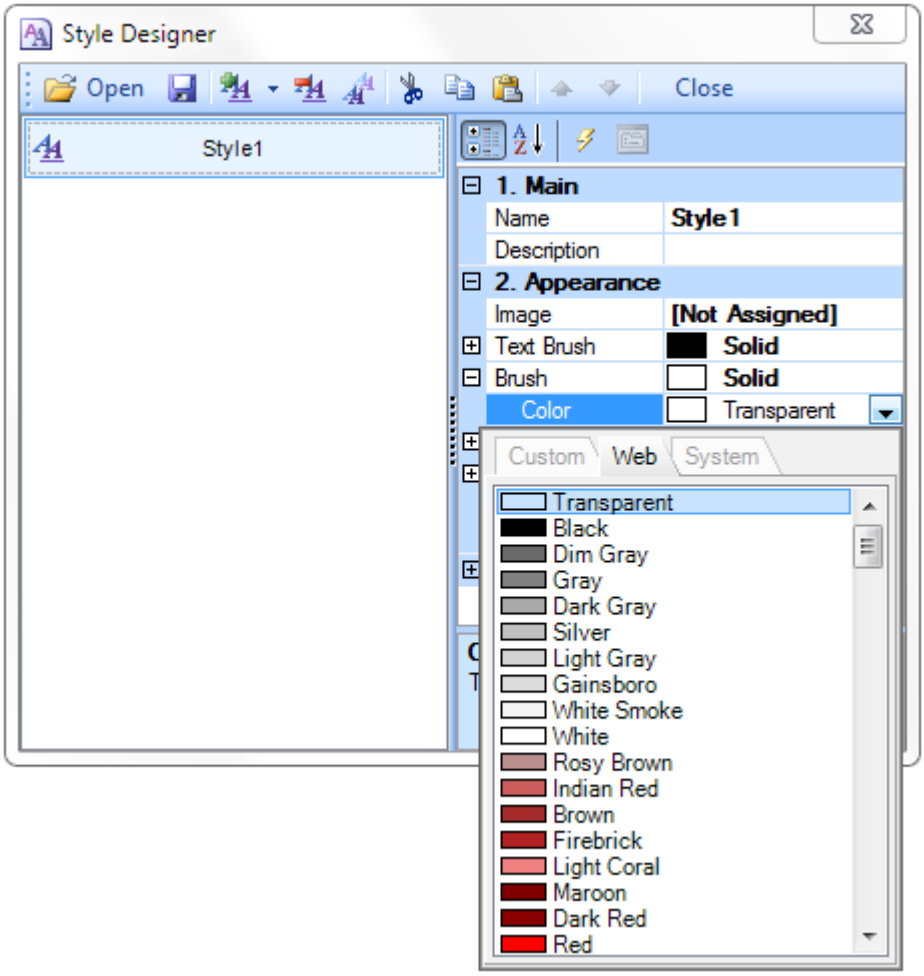


Click **Close**. Then in the list of **Even style** and **Odd style** properties a new value (a style of a list of odd and even rows).

4. To render the report, click the **Preview** button or invoke the **Viewer**, pressing **F5** or clicking the **Preview** menu item. The picture below shows a sample of a rendered report with columns on a page and alternative color of rows:

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Down Then Across

| City | City | City |
|---|---|---|
| 1.Aachen | 22.Cowes | 43.London |
| 2.Albuquerque | 23.Cunewalde | 44.London |
| 3.Anchorage | 24.Elgin | 45.Luleå |
| 4.Århus | 25.Eugene | 46.Lyon |
| 5.Barcelona | 26.Frankfurt a.M. | 47.Madrid |
| 6.Barquisimeto | 27.Genève | 48.Madrid |
| 7.Bergamo | 28.Graz | 49.Madrid |
| 8.Berlin | 29.Helsinki | 50.Mannheim |
| 9.Bern | 30.I. de Margarita | 51.Marseille |
| 10.Boise | 31.Kirkland | 52.México D.F. |
| 11.Brácke | 32.Kobenhavn | 53.México D.F. |
| 12.Brandenburg | 33.Köln | 54.México D.F. |
| 13.Bruxelles | 34.Lander | 55.México D.F. |
| 14.Buenos Aires | 35.Leipzig | 56.México D.F. |
| 15.Buenos Aires | 36.Lille | 57.Montréal |
| 16.Buenos Aires | 37.Lisboa | 58.München |
| 17.Butte | 38.Lisboa | 59.Münster |
| 18.Campinas | 39.London | 60.Nantes |
| 19.Caracas | 40.London | 61.Nantes |
| 20.Charleroi | 41.London | 62.Oulu |
| 21.Cork | 42.London | 63.Paris |

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Across Then Down

| City | City | City |
|---|---|---|
| 1.Aachen | 2.Albuquerque | 3.Anchorage |
| 4.Århus | 5.Barcelona | 6.Barquisimeto |
| 7.Bergamo | 8.Berlin | 9.Bern |
| 10.Boise | 11.Bräcke | 12.Brandenburg |
| 13.Bruxelles | 14.Buenos Aires | 15.Buenos Aires |
| 16.Buenos Aires | 17.Butte | 18.Campinas |
| 19.Caracas | 20.Charleroi | 21.Cork |
| 22.Cowes | 23.Cunewalde | 24.Elgin |
| 25.Eugene | 26.Frankfurt a.M. | 27.Genève |
| 28.Graz | 29.Helsinki | 30.I. de Margarita |
| 31.Kirkland | 32.Kobenhavn | 33.Köln |
| 34.Lander | 35.Leipzig | 36.Lille |
| 37.Lisboa | 38.Lisboa | 39.London |
| 40.London | 41.London | 42.London |
| 43.London | 44.London | 45.Luleå |
| 46.Lyon | 47.Madrid | 48.Madrid |
| 49.Madrid | 50.Mannheim | 51.Marseille |
| 52.México D.F. | 53.México D.F. | 54.México D.F. |
| 55.México D.F. | 56.México D.F. | 57.Montréal |
| 58.München | 59.Münster | 60.Nantes |
| 61.Nantes | 62.Oulu | 63.Paris |

## 3.6. Report with Chart

Do the following steps to create a report with charts:

1. Run the designer;
2. Connect data:
   2.1. Create **New Connection**;
   2.2. Create **New Data Source**;

3. Put the **Chart** component on a page as seen on a picture below.

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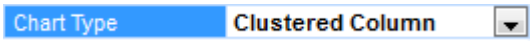
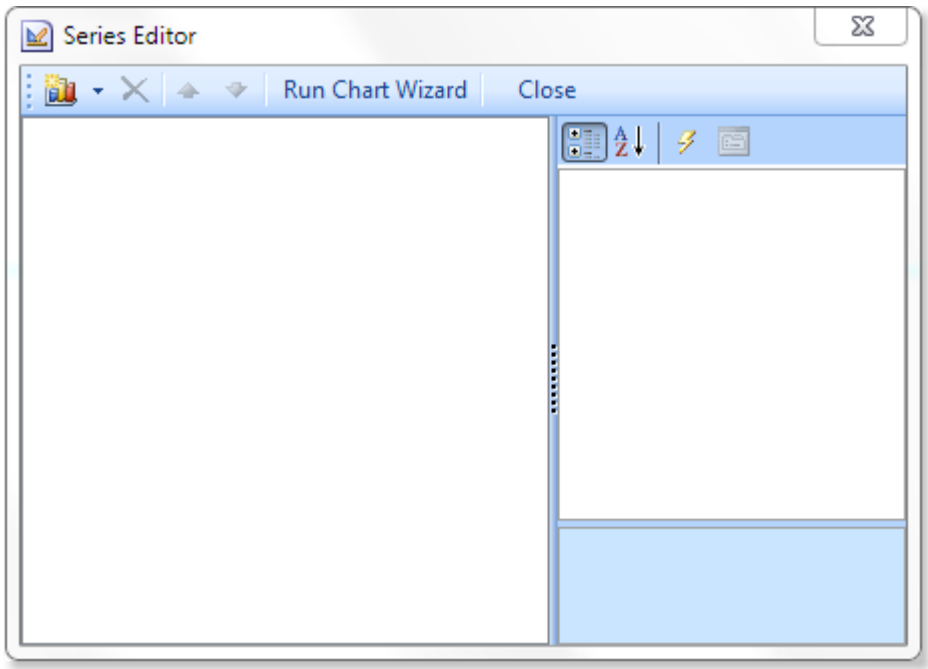
4. Edit the **Chart** component:
   4.1. Align it by width;
   4.2. Change properties of the **Chart** component. For example, set the **GrowToHeight** property to **true**, if it is required the Chart component be grown by height;
   4.3. Set **Borders**, if required, for the **Chart** component;
   4.4. Change the border color.
   4.5. Edit the chart area. For example, change the **Area.Brush.Color** property, if it is required to change the color of a chart area.

5. Change the type of a chart using the **Chart Type** property. For example, set it to **Clustered Column**:




6. Add series. Invoke the **Series Editor**, for example, by double-clicking the **Chart**.

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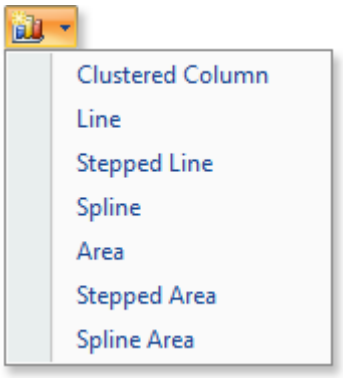
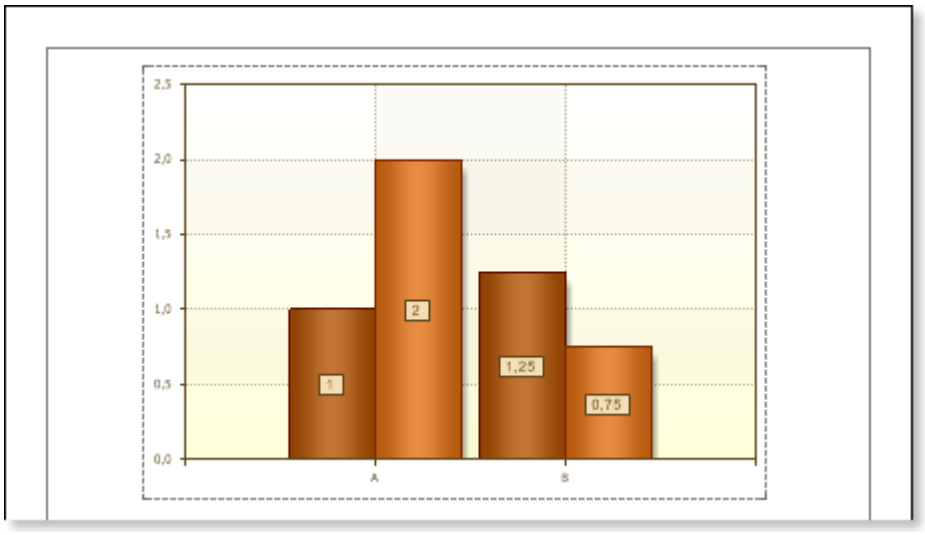
Click the **Add Series** button to add a series and select the type of series in the menu. The picture below shows the menu of the **Add Series** button:




It should be noted that the type of number should match the type of chart, i.e. if the **Clustered Column** chart type, then the series must be of the **Clustered Column** type.

7. Setup chart series:
   7.1. Get the data for **Value** and for the **Argument** of series. There are three ways to get data for the series: set the column data from the dictionary, or specify an expression, or manually specify values for the series as a list, through the ',' separator. For example, create two rows, and manually define the values for these series as a list, with the ";" delimiter: arguments for **Series 1** - **A**; **B**, the values - **1**; **1.25**; for arguments **Series 2** - **A**; **B**, the value - **2**, **0.75**.
   7.2. Change the values of the series properties. For example, set the **Show Zeros** property to **false**, if it is necessary to hide zero values;
   7.3. Enable or disable **Series Labels**;
   7.4. Edit headers of rows: align, change the style, font, type of value, etc.;
   7.5. Change the design of series, by setting values of the following properties: **Border Color**, **Brush**, **Show Shadow**.

The picture below shows an example of a report template with the chart:

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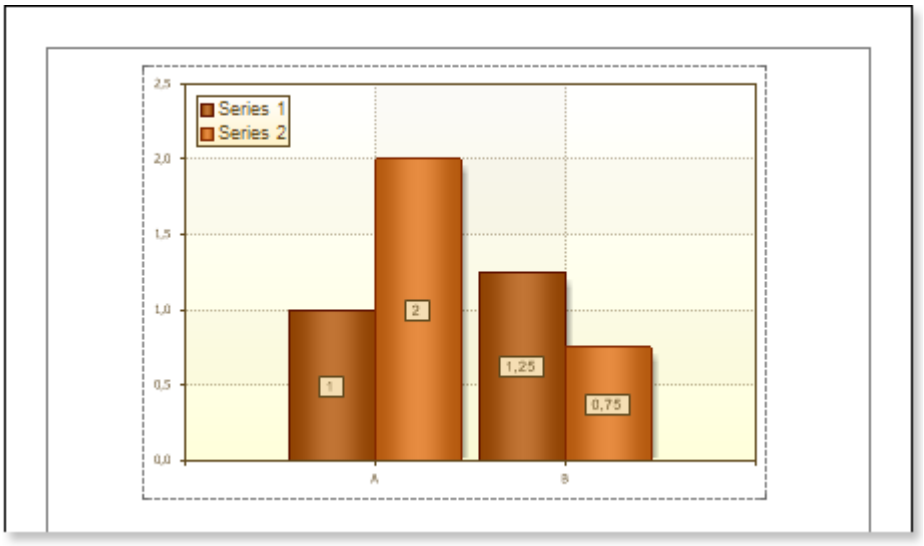
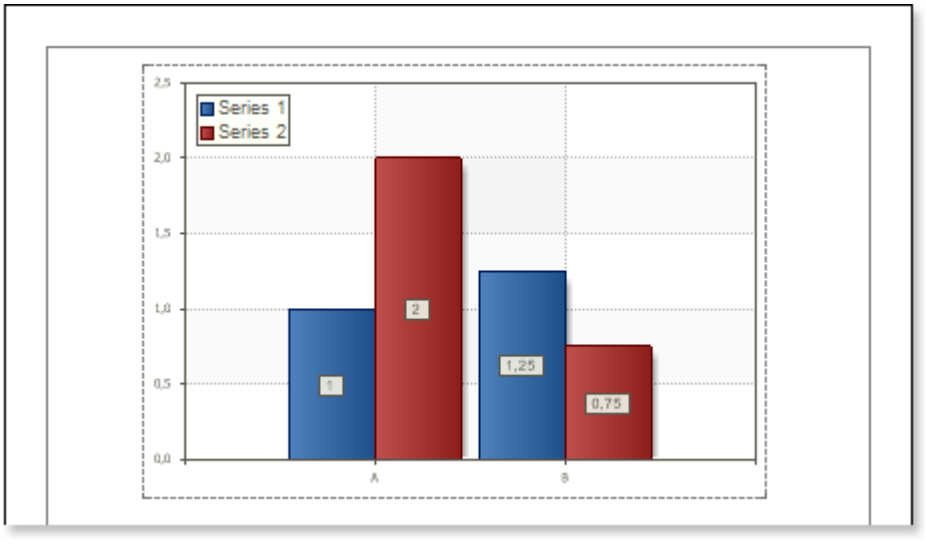
8. Edit **Legend**:
    8.1. Enable or disable the visibility of **Legends**. You can do it by setting the value of the **Legend.Visible** property to **true** or **false**, respectively;
    8.2. Align the legend horizontally and vertically;
    8.3. Change the legends design, etc.

The picture below shows an example of a report template with the chart displaying the legend:




9. Change the style of the chart, i.e. completely change the appearance of the chart:
    9.1. Change the **Style** property. Where the value of the property is a chart style;
    9.2. Set the **AllowApplyStyle** to the **true**. If the **AllowApplyStyle** property is set to **false**, then the report generator, when rendering, will take into account the values of the appearance of the series.

The picture below shows an example of a report template of the chart with a changed style:




10. Click the **Preview** button or invoke the **Viewer**, pressing **F5** or clicking the **Preview** menu item . The picture below shows samples of reports with the chart:

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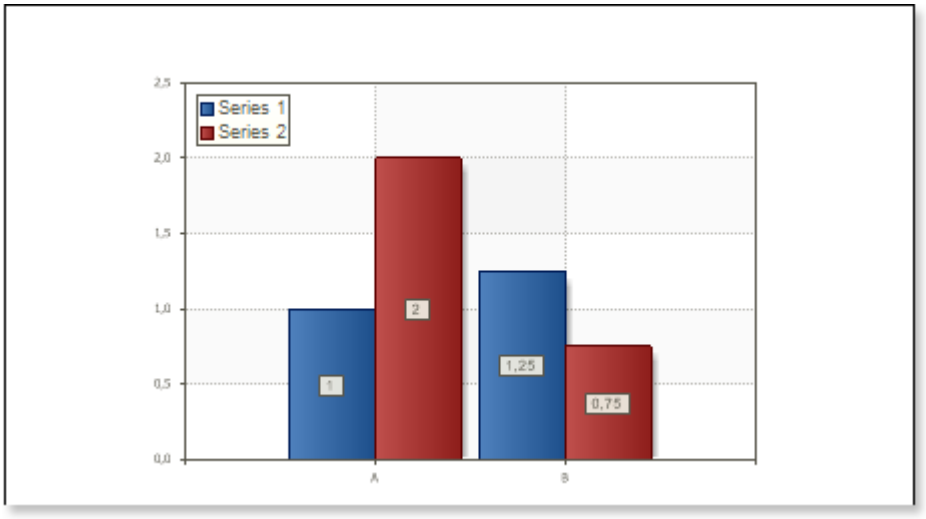
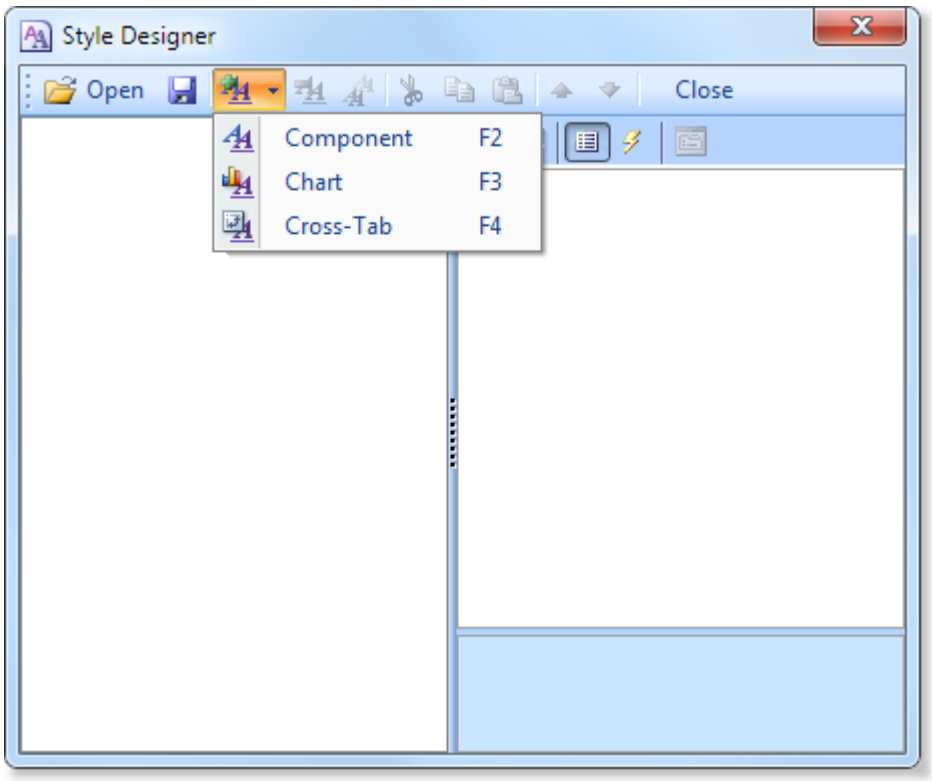



## Adding styles

1. Go back to the report template;
2. Call the **Style Designer**;

The picture below shows the **Style Designer**:




Click the **Add Style** button to start creating a style. Select **Chart** from the drop down list. Set the

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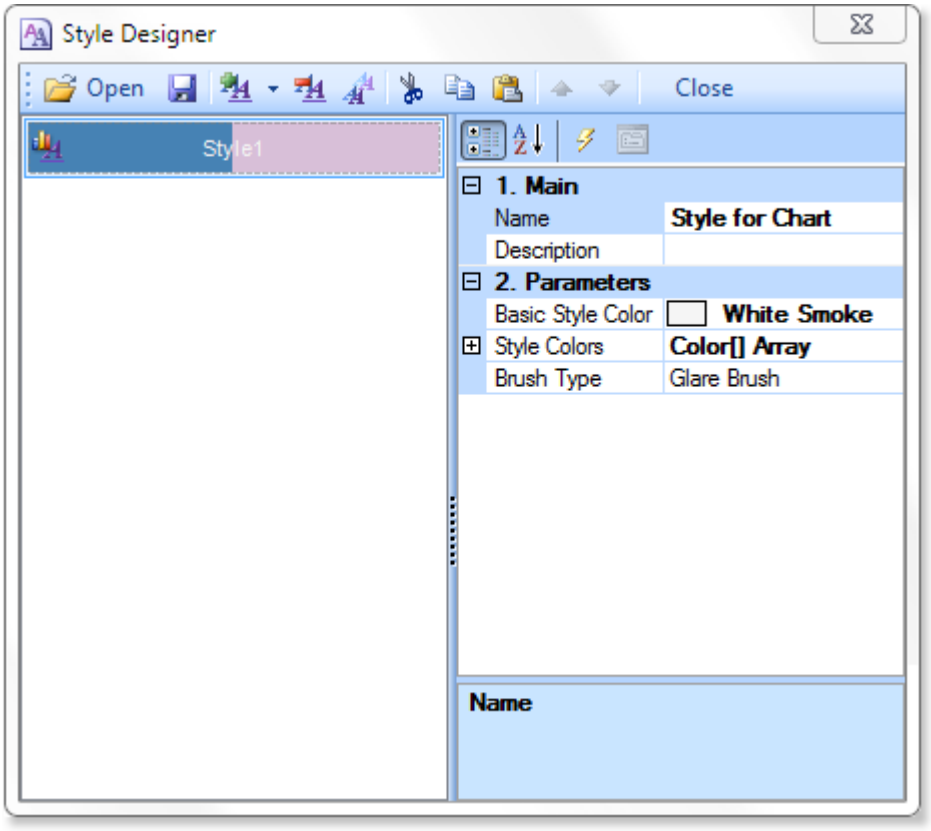
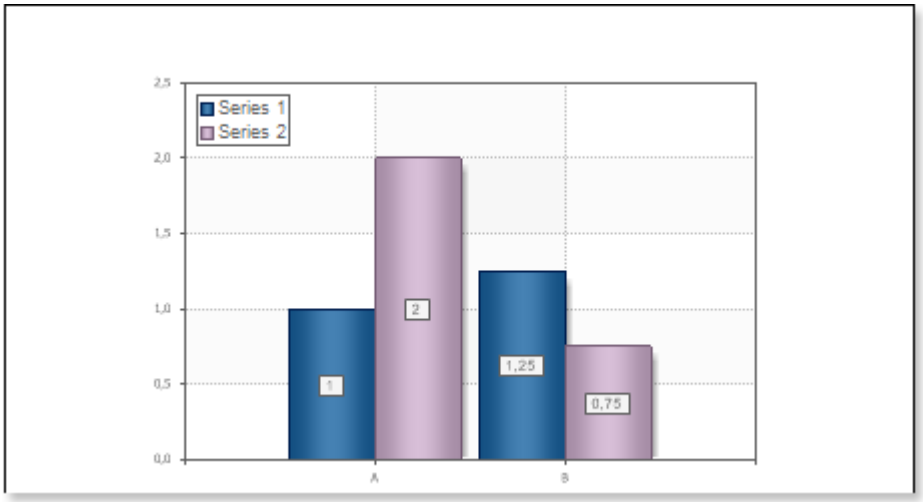
style using **Basic Color Style**, **Brush Type** and **Style Colors** group of properties.




Click **Close**. In the list of values of the **Style** property of the chart component a custom style will be displayed. In our case, the value is **Style for Chart**. Select this value;

3. Click the **Preview** button or invoke the **Viewer**, pressing **F5** or clicking the **Preview** menu item. The picture below shows samples of reports with the chart with a style applied:

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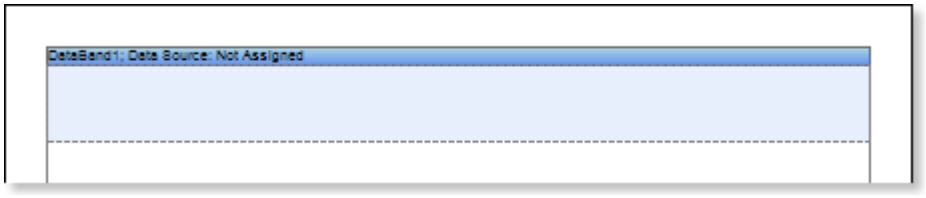
## 3.7. Report with Chart in DataBand

Suppose a **Chart** component is placed on the page of the report, then, for a report, this component will be rendered as a page item. If the **Chart** component is placed in the **DataBand**, then, when rendering a report, this component will be rendered as part of the **DataBand**. Since the **Chart** component placed in the **DataBand**, is rendered as a part of the **DataBand**, and will be printed as many times as the **DataBand** will be output. An example of designing a report with a chart in the **DataBand** will be described below. In this example, the chart will graphically display the detailed data of the data source in the **DataBand**. Follow the steps below in order to render a report with the **Chart** in the **DataBand**:

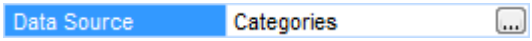
1. Run the designer;
2. Connect data:
   2.1. Create **New Connection**;
   2.2. Create **New Data Source**;

3. Create a **Relation** between data sources. In this case, the **Parent Data Source** is the **Categories** data source, and the **Child Data Source** is the **Products** data source;
4. Put the **DataBand** on a report template page:




5. Edit **DataBand**:
   5.1. Align the **DataBand** by height;
   5.2. Change values of band properties. For example, set the **Can Break** property to **true**, if you wish the data band to be broken;
   5.3. Change the **DataBand** background;
   5.4. Enable **Borders** for the **DataBand**, if required;
   5.5. Change the border color.

6. Define the data source for the **DataBand** using the **Data Source** property:




7. Put the **Chart** component in the **DataBand** as seen on a picture below:

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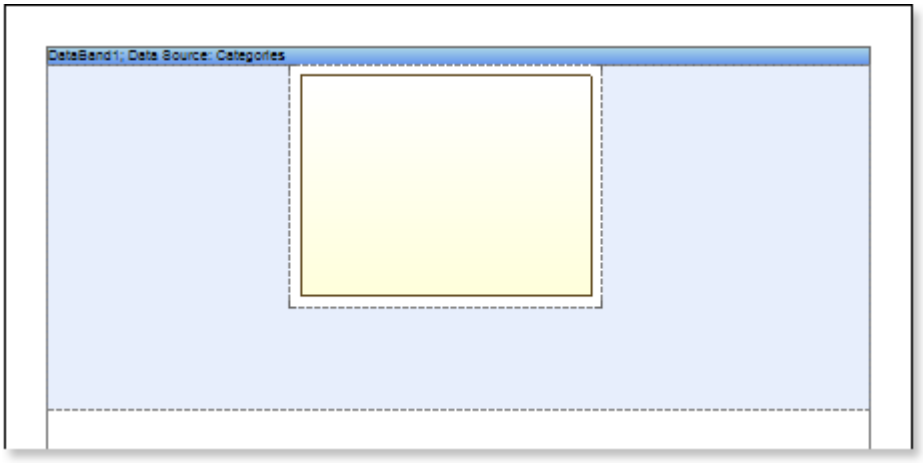
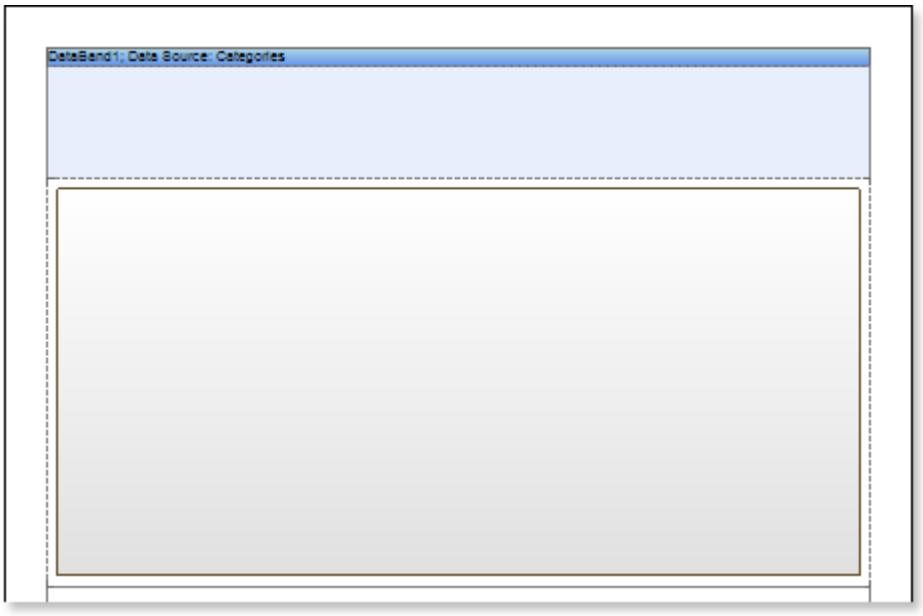
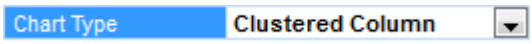



8. Edit the **Chart** component:
   8.1. Align it by width;
   8.2. Change properties of the **Chart** component. For example, set the **GrowToHeight** property to **true**, if it is required the Chart component be grown by height;
   8.3. Set **Borders**, if required, for the **Chart** component;
   8.4. Change the border color.
   8.5. Edit the chart area. For example, change the **Area.Brush.Color** property, if it is required to change the color of a chart area.




9. Change the type of a chart using the **Chart Type** property. For example, set it to **Clustered Column**:




10. Define the data source for the **Chart** component using the **Data Source** property

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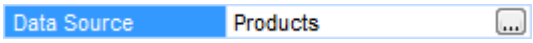
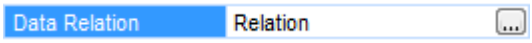
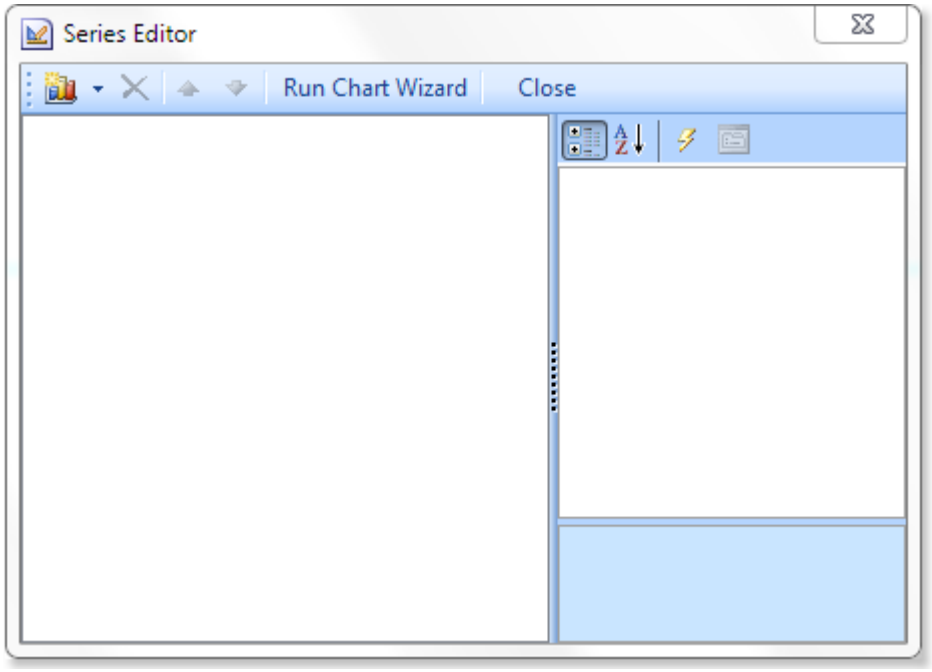


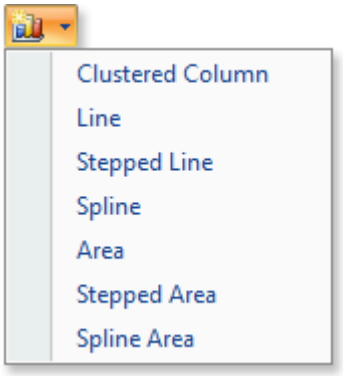

11. Define the relation between data sources, using the **DataRelation** property of the **Chart** component:




12. Add series. Invoke the **Series Editor**, for example, by double-clicking the **Chart**:




Click the **Add Series** button to add a series and select the type of series in the menu. The picture below shows the menu of the **Add Series** button:




It should be noted that the type of number should match the type of chart, i.e. if the **Clustered Column** chart type, then the series must be of the **Clustered Column** type.

13. Setup chart series:

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13.1. Get the data for **Value** and for the **Argument** of series. There are three ways to get data for the series: set the column data from the dictionary, or specify an expression, or manually specify values for the series as a list, through the ',' separator. For example, create a series and specify columns from the dictionary: define the **Products.ProductName** for the **Argument** and **Products.UnitPrice** for the **Value**;

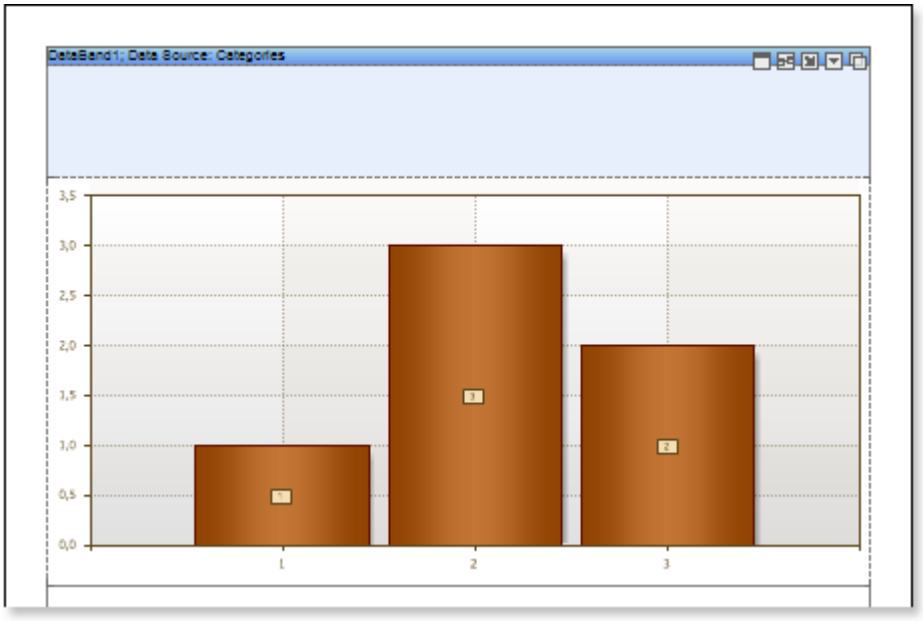
13.2. Change the values of the series properties. For example, set the **Show Zeros** property to **false**, if it is necessary to hide zero values;

13.3. Enable or disable **Series Labels**;

13.4. Edit headers of rows: align, change the style, font, type of value, etc.;

13.5. Change the design of series, by setting values of the following properties: **Border Color**, **Brush**, **Show Shadow**.

The picture below shows an example of a report template with the chart:




14. Edit **Legend**:

14.1. Enable or disable the visibility of **Legends**. You can do it by setting the value of the **Legend.Visible** property to **true** or **false**, respectively;

14.2. Align the legend horizontally and vertically;

14.3. Change the legends design, etc.

The picture below shows an example of a report template with the chart displaying the legend:

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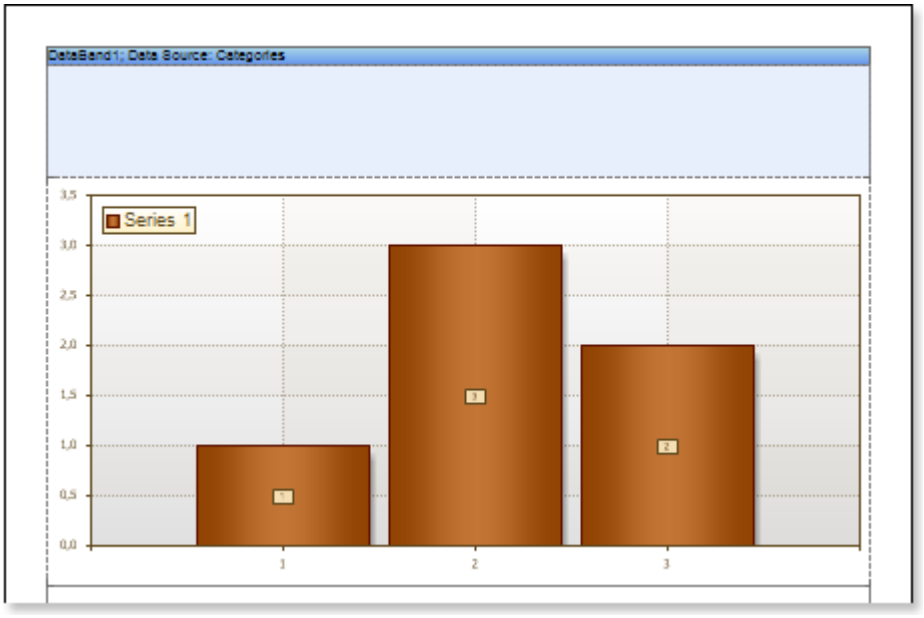
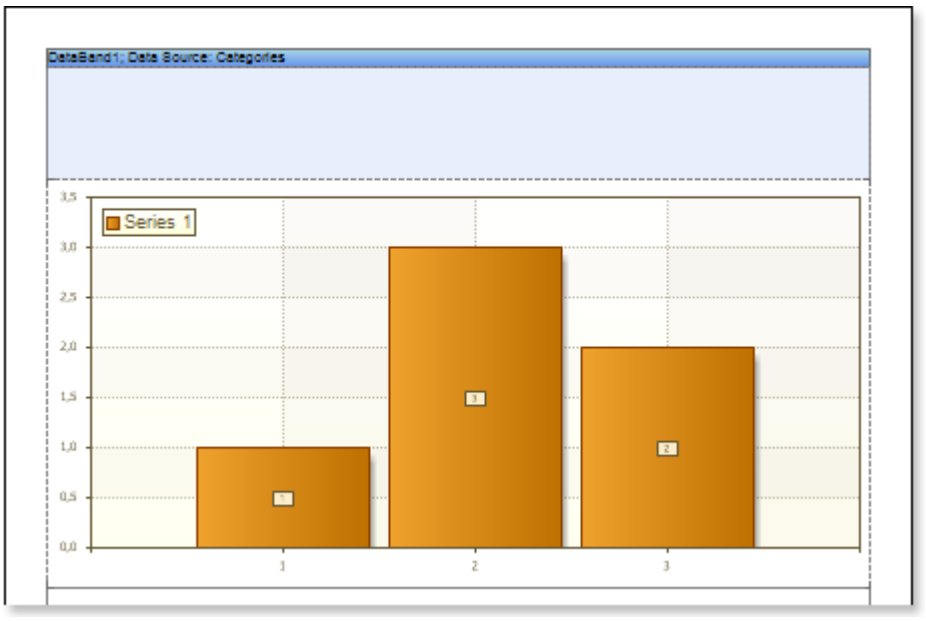



15. Change the style of the chart, i.e. completely change the appearance of the chart:
    15.1. Change the **Style** property. Where the value of the property is a chart style;
    15.2. Set the **AllowApplyStyle** to the **true**. If the **AllowApplyStyle** property is set to **false**, then the report generator, when rendering, will take into account the values of the appearance of the series.

The picture below shows an example of a report template of the chart with a changed style:




16. Put text components with an expression in the **DataBand**. Where the expression is a reference to the data field. For example, put a text component with the expression: **{Categories. CategoryName}**;
17. Edit **Text** and **TextBox** component:
    17.1. Drag and drop the text component in the **DataBand**;

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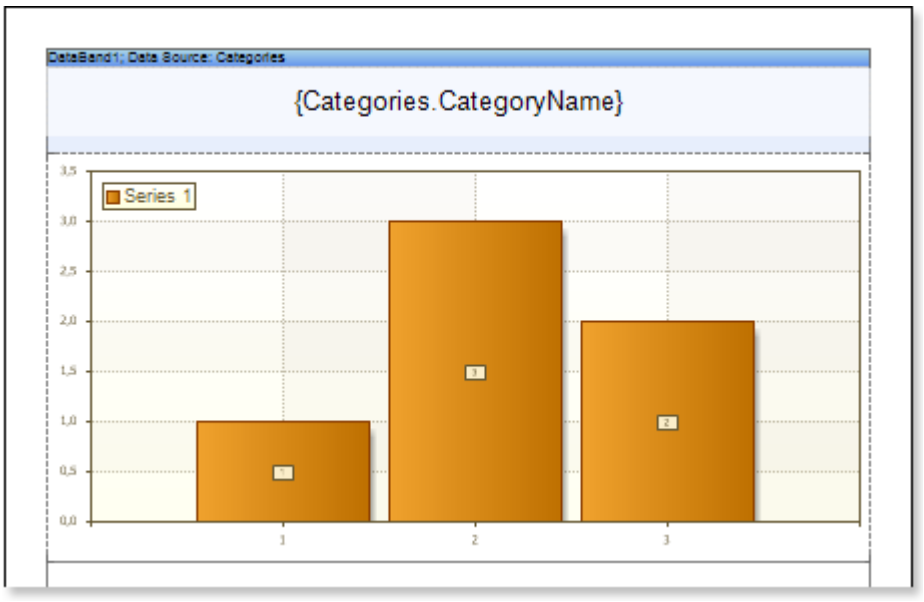
17.2. Change parameters of the text font: size, type, color;
17.3. Align the text component by width and height;
17.4. Change the background of the text component;
17.5. Align text in the text component;
17.6. Change the value of properties of the text component. For example, set the **Word Wrap** property to **true**, if you need a text to be wrapped;
17.7. Enable **Borders** for the text component, if required.
17.8. Change the border color.




18. Click the **Preview** button or invoke the **Viewer**, pressing **F5** or clicking the **Preview** menu item . The picture below shows a sample of the report with the chart in the **DataBand**:

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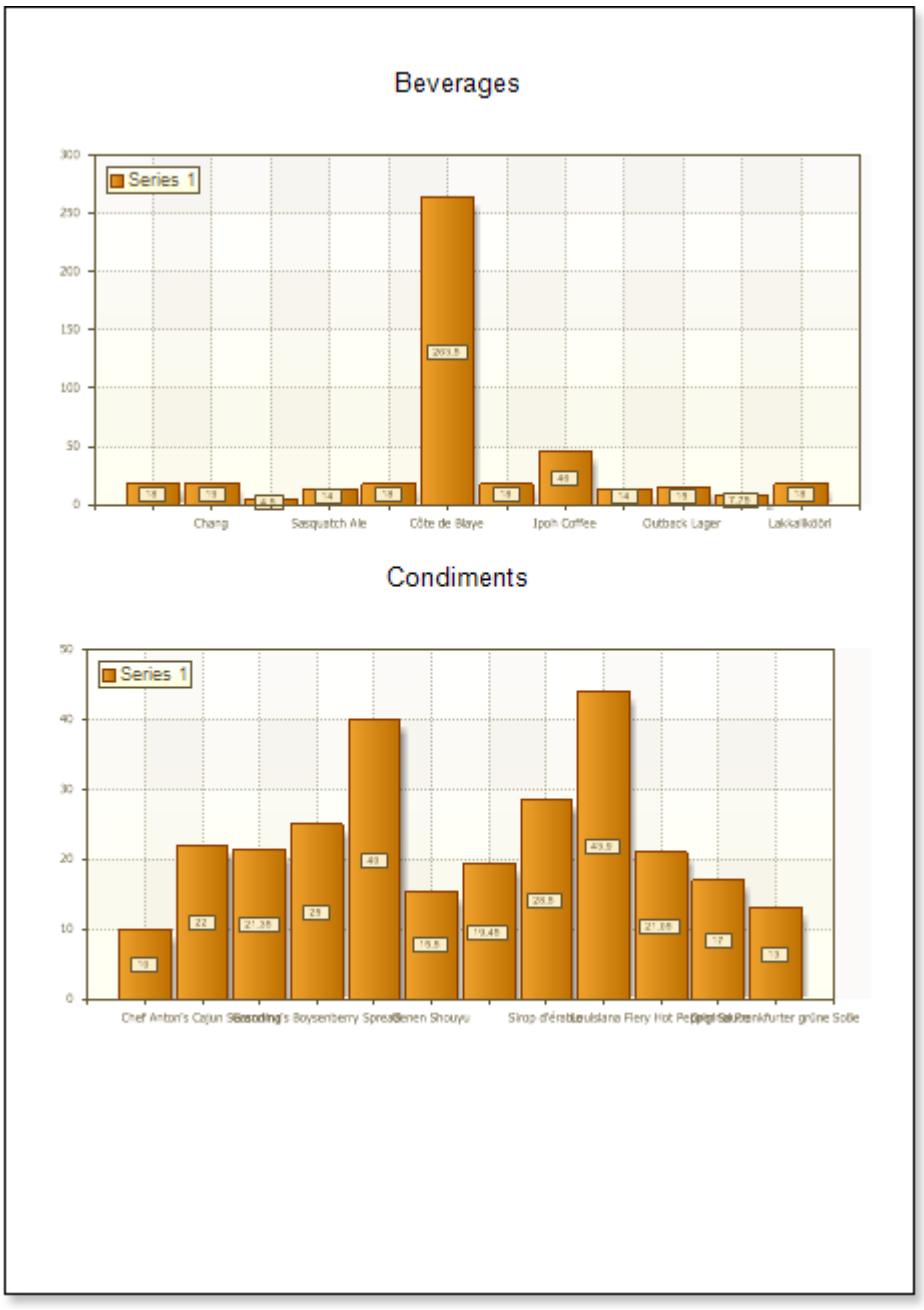
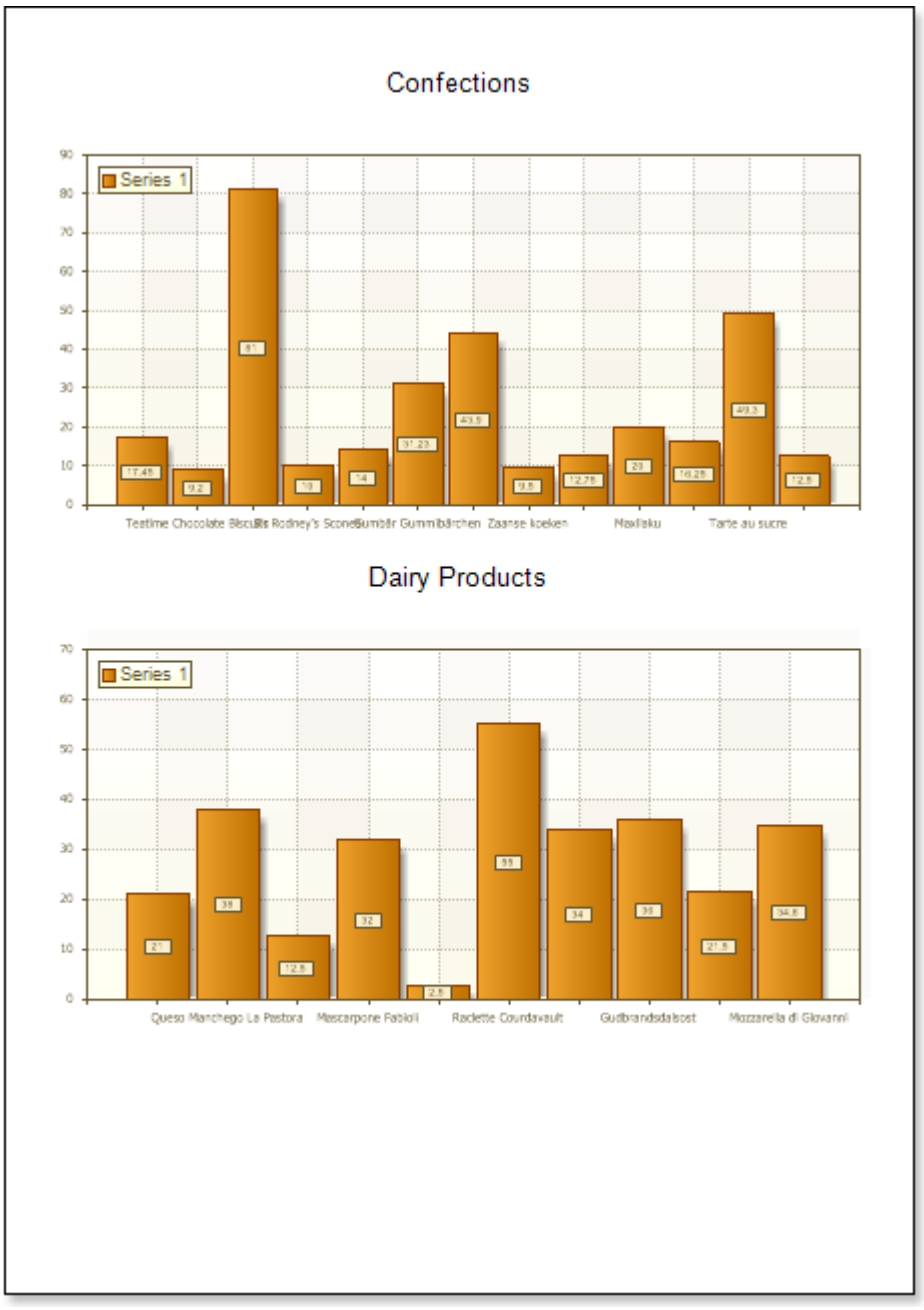

Beverages
Series 1
300
250
200
150
100
50
0
263.5
46
18
14
7.75
Chang
Sasquatch Ale
Côte de Blaye
Ipoh Coffee
Outback Lager
Condiments
Series 1
50
40
30
20
10
0
49
43.9
29.5
25
22
21.35
21.05
19.45
17
16.8
13
Chef Anton's Cajun
's Boysenberry Spread
Genen Shouyu
Louisiana Fiery Hot
Frankfurter grüne Soße




## Adding styles

1. Go back to the report template;
2. Call the **Style Designer**;

The picture below shows the **Style Designer**:

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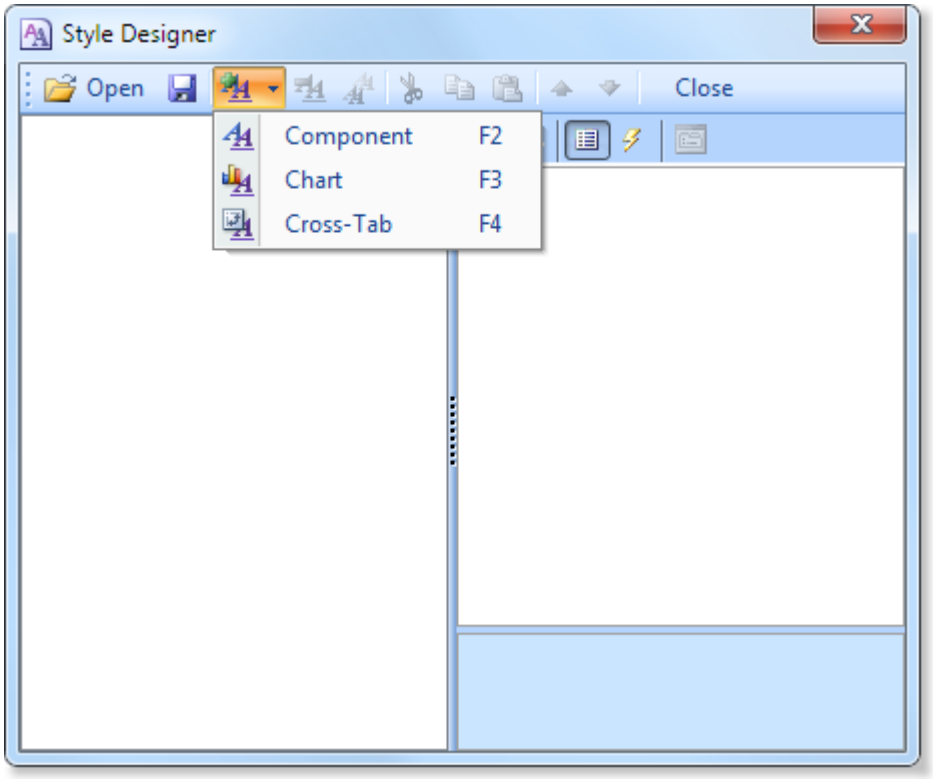


Click the **Add Style** button to start creating a style. Select **Chart** from the drop down list. Set the style using **Basic Color Style**, **Brush Type** and **Style Colors** group of properties.

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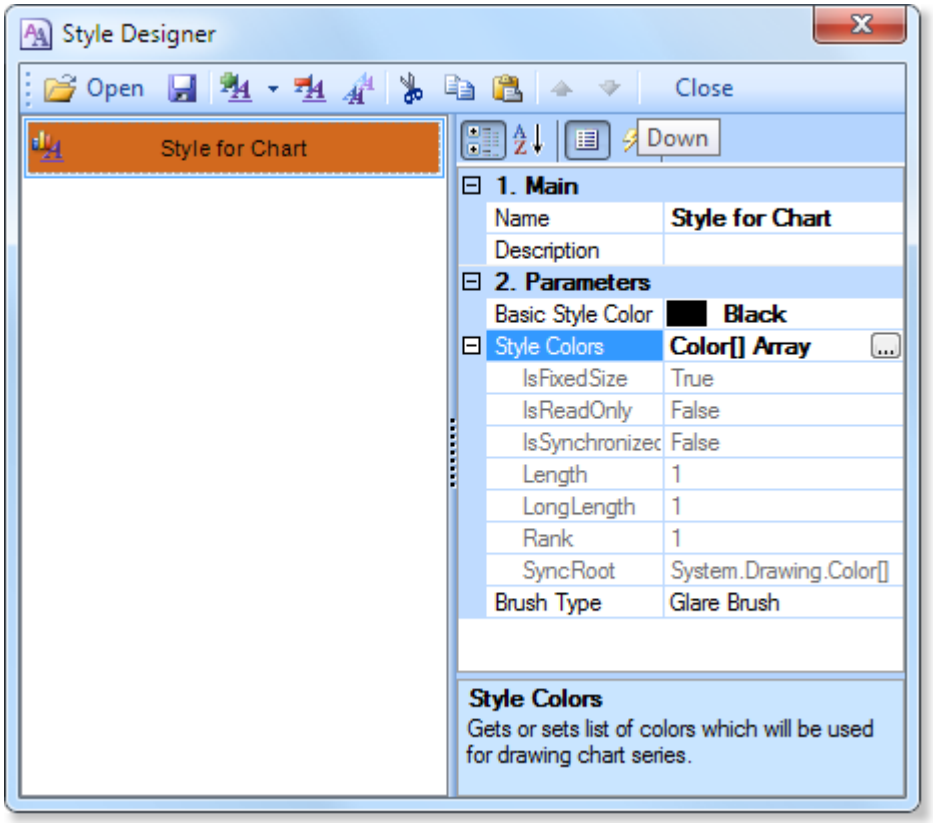


Click **Close**. In the list of values of the **Style** property of the chart component a custom style will be displayed. In our case, the value is **Style for Chart**. Select this value;

3. Click the **Preview** button or invoke the **Viewer**, pressing **F5** or clicking the **Preview** menu item. The picture below shows samples of reports with the chart with a style applied:

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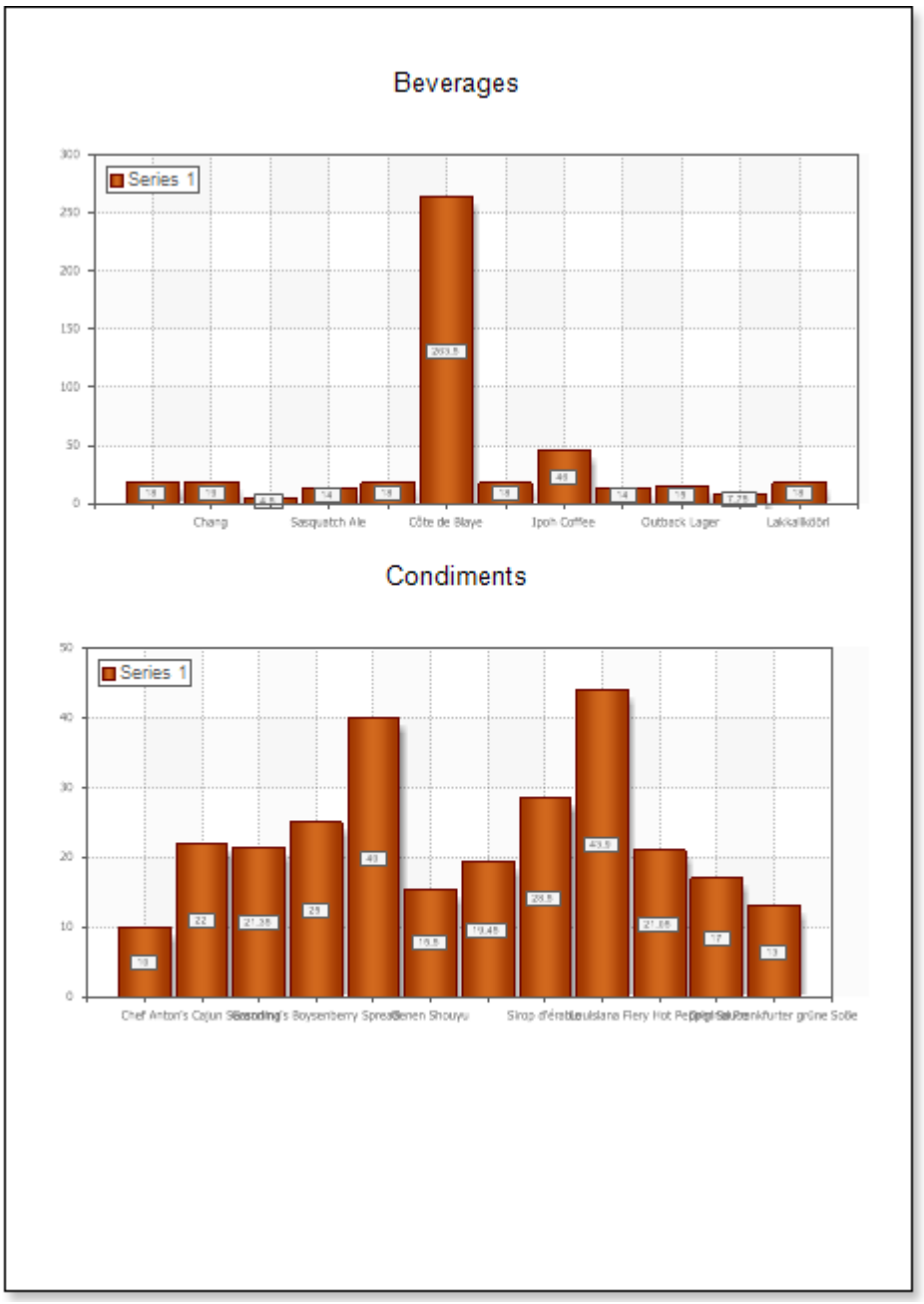
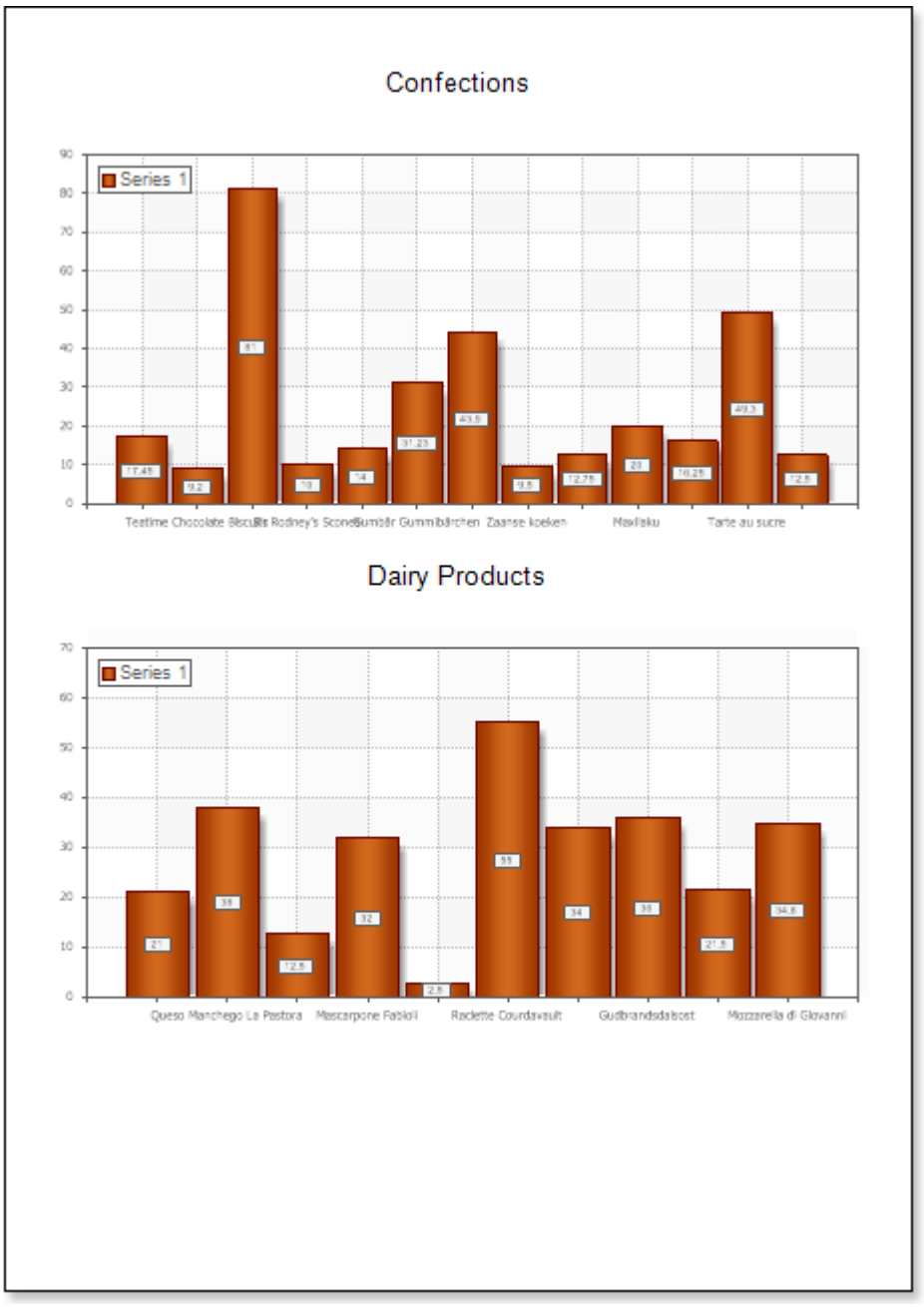

Beverages
Series 1
300
250
200
150
100
50
0
Chang
Sasquatch Ale
Côte de Blaye
Ipoh Coffee
Outback Lager
Lakkalikööri
Condiments
Series 1
50
40
30
20
10
0



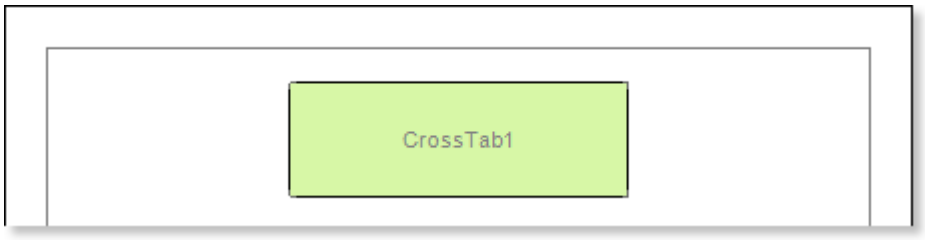

## 3.8. Report with Cross-Tab

Do the following steps to create a report with the cross table:

1. Run the designer;
2. Connect data:
    2.1. Create **New Connection**;

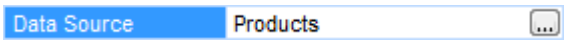
2.2. Create **New Data Source**;

3. Put the **Cross-Tab** component on a page of the report template.

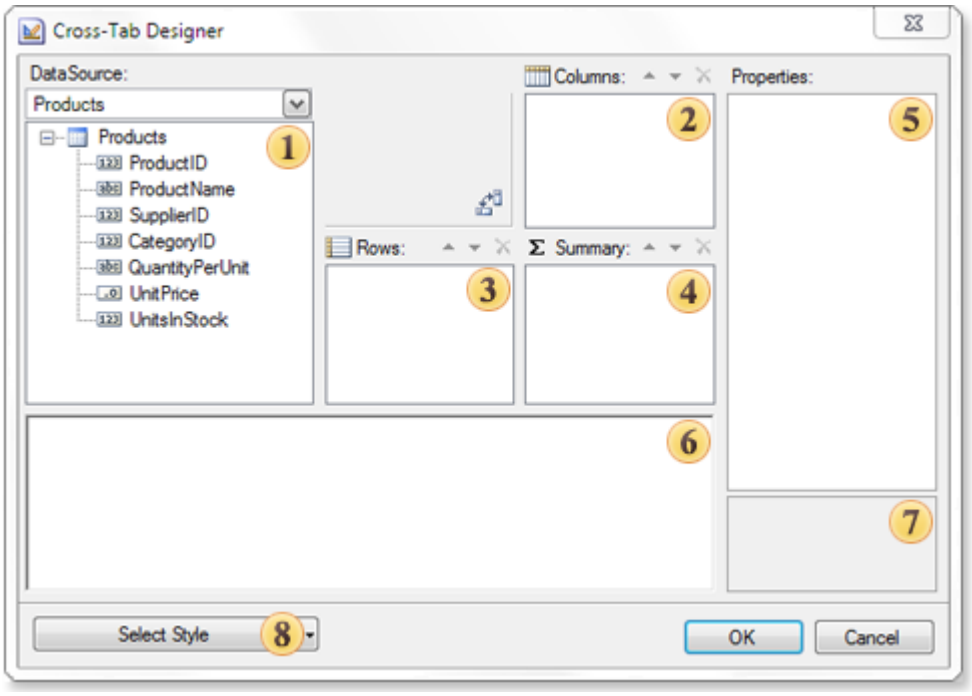



4. Edit the **Cross-Tab** component:
4.1. For example, set the **GrowToHeight** property to **true**, to allow the **Cross-Tab** component to grow by height;

5. Define the data source for the **Cross-Tab** component of the band, for example, using the **Data Source** property:




6. Invoke the **Cross-Tab Designer**, for example, clicking the **Design...** item of the context menu of the cross table component. The picture below shows the **Cross-Tab Designer** window:




1 The **DataSource** field shows the data columns of the selected data source;
2 The **Columns** field shows a list of columns of the data source by what the columns in the cross table will be created;
3 The **Rows** field shows a list of rows of the data source by what the rows in the cross table will be

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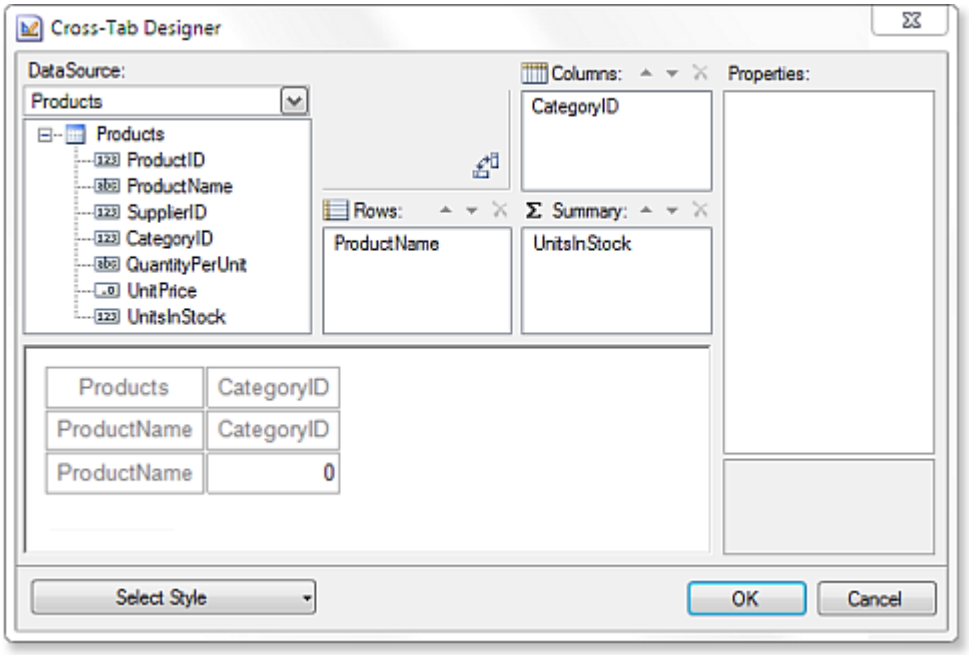
created;
4 The **Summary** field shows a list of columns of the data source by what the summary in the cross table will be created;
5 The **Properties** field shows the properties of the selected item of the cross table;
6 The **Cross-Tab Cells** field shows cells of the cross table;
7 The **Description** field shows a brief description of the selected property of the cross table item;
8 The **Select Style** button. When clicking the drop down list of styles for the cross table appear.

7. Do the following steps in the **Cross-Tab Designer**:

7.1. Add the data column from the 1 **DataSource** to the 2 **Columns** field of the cross-tab. For example, add the **CategoryID** data column to the **Columns** field of the cross-tab. Hence one entry from this data column will correspond to one column in the rendered cross-table, i.e. the number of entries in this data column will be equal to the number of columns in the cross-table;

7.2. Add a column of the data source from 1 the **DataSource** field to 3 the **Rows** of the cross-table. For example, add the **ProductName** data column to the **Rows** field of the cross-table, and then one entry from this data column will correspond to one row in the rendered cross-table, i.e. the number of entries in this data column will be equal to the number of rows in the cross-table;

7.3. Add a data column from 1 the **DataSource** field to the 4 **Summary** field of the cross-table. For example, add the **UnitInStock** data column to the **Summary** field of the cross-table, i.e. all entries in this data column will be summary entries in the cross-table;




8. Press the **OK** button in order to save your changes and go back to the report template with cross-table.

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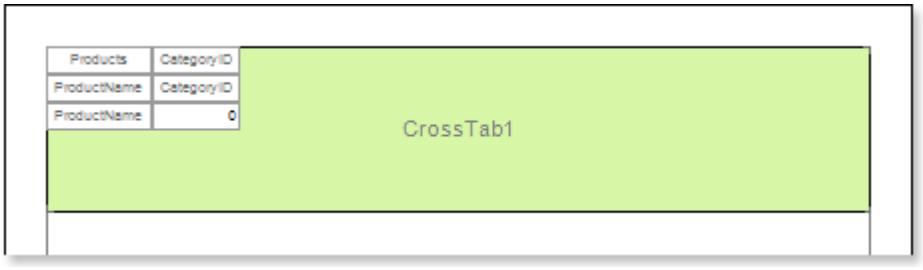
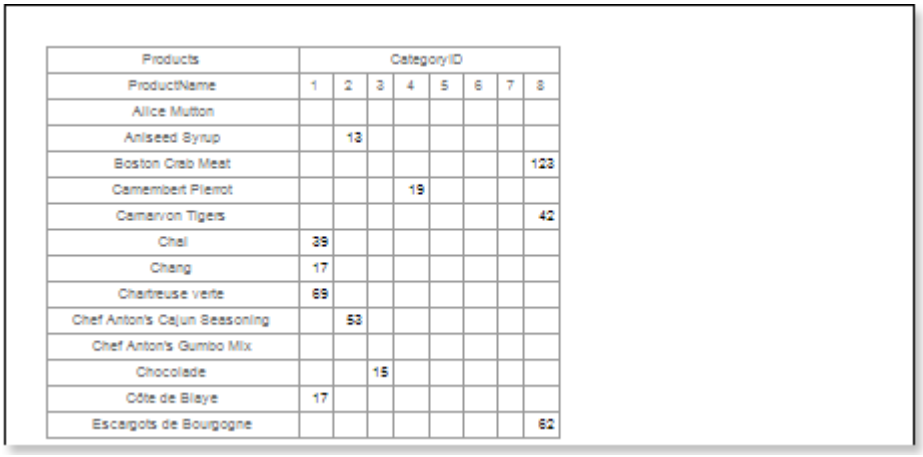
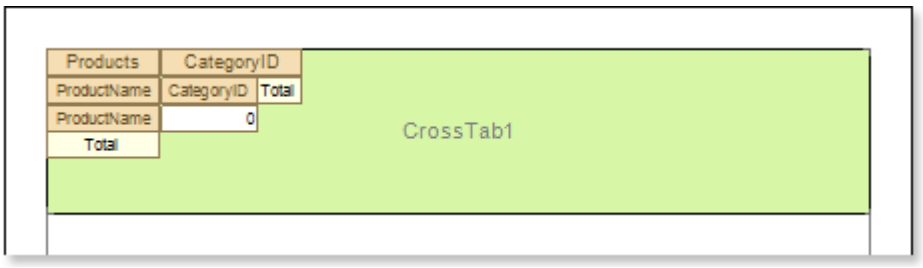



9. Click the **Preview** button or invoke the **Viewer**, pressing **F5** or clicking the **Preview** menu item. The picture below shows a rendered cross-tab report:



| Products | CategoryID | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| ProductName | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Alice Mutton | | | | | | | | |
| Aniseed Syrup | | 13 | | | | | | |
| Boston Crab Meat | | | | | | | | 123 |
| Camembert Pierrot | | | | 19 | | | | |
| Carnarvon Tigers | | | | | | | | 42 |
| Chai | 39 | | | | | | | |
| Chang | 17 | | | | | | | |
| Chartreuse verte | 69 | | | | | | | |
| Chef Anton's Cajun Seasoning | | 53 | | | | | | |
| Chef Anton's Gumbo Mix | | | | | | | | |
| Chocolade | | | 15 | | | | | |
| Côte de Blaye | 17 | | | | | | | |
| Escargots de Bourgogne | | | | | | | | 62 |

10. Go back to the report template;
11. Edit cells in the report template:
    11.1. Set the font settings: type, style, size;
    11.2. Set the background of cells;
    11.3. Set the **Word Wrap** property to **true** if it is necessary to wrap text;
    11.4. Switch on/off **Borders**;
    11.5. Set the border color;
    11.6. Set the background of cells etc.




12. Click the **Preview** button or invoke the **Viewer**, pressing **F5** or clicking the **Preview** menu item . The picture below shows a report of the rendered report with the cross table after editing report template cells:

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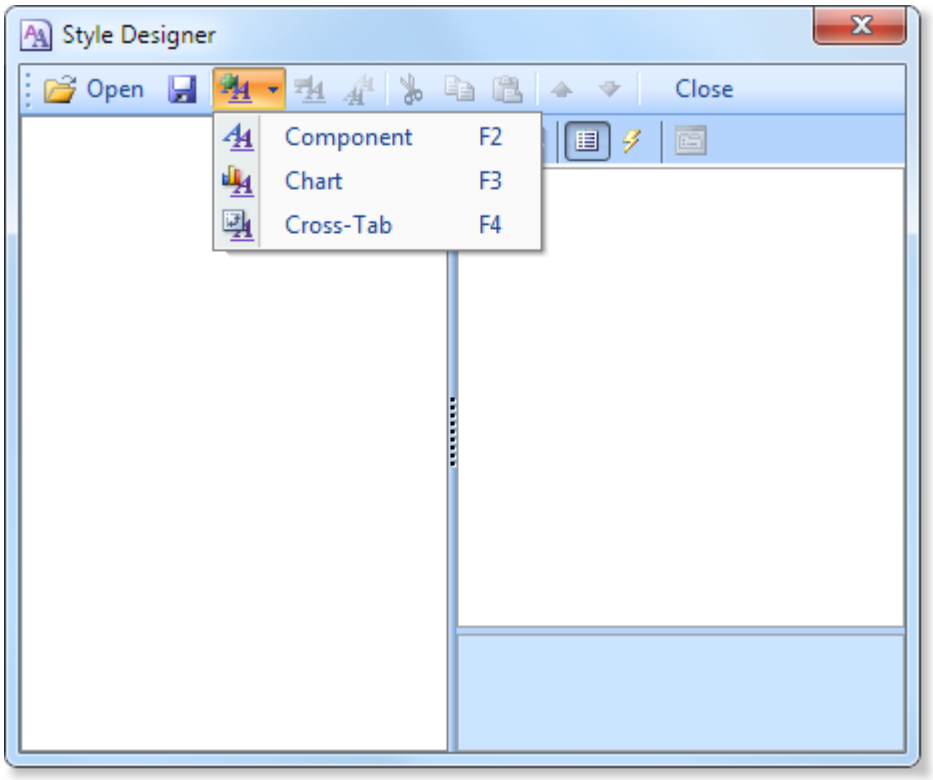
| Products | CategoryID | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| ProductName | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Alice Mutton | | | | | | | | |
| Aniseed Syrup | | 13 | | | | | | |
| Boston Crab Meat | | | | | | | | 123 |
| Camembert Pierrot | | | | 19 | | | | |
| Carnarvon Tigers | | | | | | | | 42 |
| Chai | 39 | | | | | | | |
| Chang | 17 | | | | | | | |
| Chartreuse verte | 69 | | | | | | | |
| Chef Anton's Cajun Seasoning | | 53 | | | | | | |
| Chef Anton's Gumbo Mix | | | | | | | | |
| Chocolade | | | 15 | | | | | |
| Côte de Blaye | 17 | | | | | | | |
| Escargots de Bourgogne | | | | | | | | 62 |

## Adding styles

1. Go back to the report template;
2. Call the **Style Designer**;

The picture below shows the **Style Designer**:




Click the **Add Style** button to start creating a style. Select **Cross-Tab** from the drop down list. To create the custom style, set the **Color** property. The picture below shows a sample of the **Style Designer** with created custom style**:**

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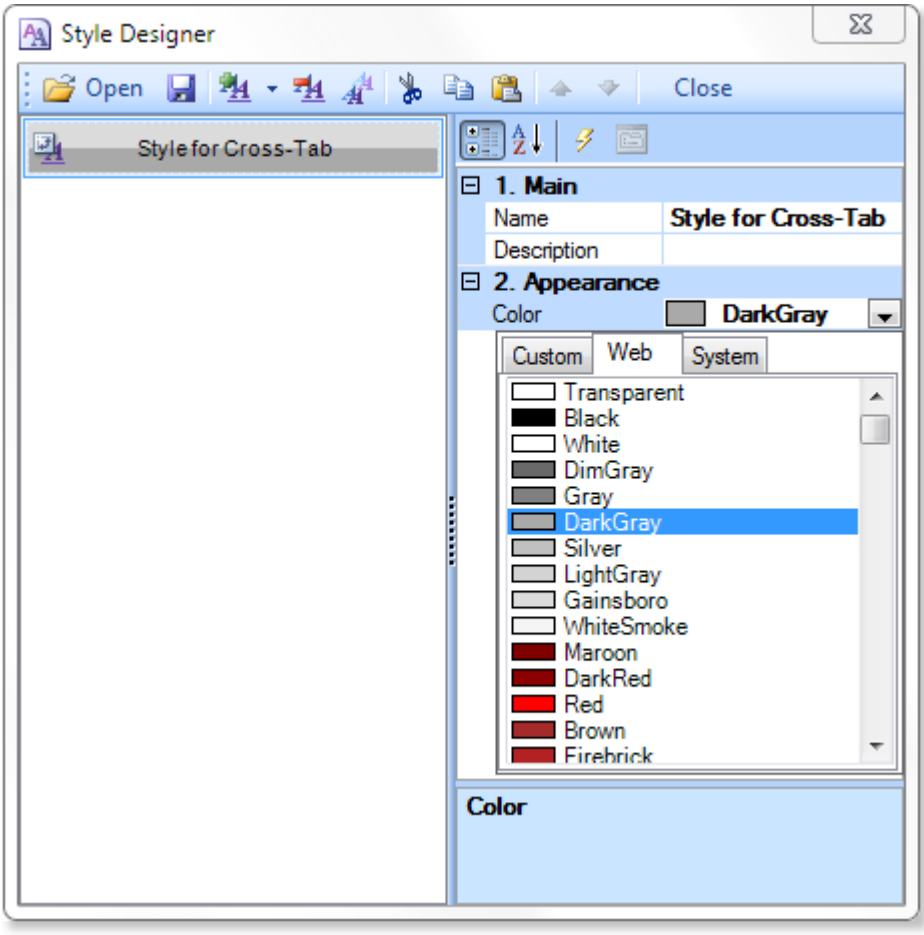
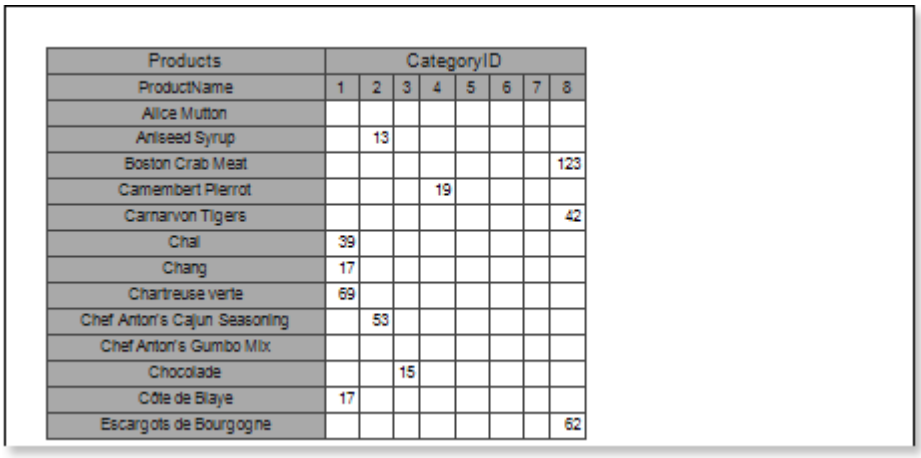



Click **Close**. In the list of values of the **Select Style** button in the cross-table editor, a custom style will be displayed. In our case, the name is **Style for Cross-Tab**. Select this value;

3. Click the **Preview** button or invoke the **Viewer**, pressing **F5** or clicking the **Preview** menu item. The picture below shows a sample of the rendered cross-table report using the custom style:



| Products | CategoryID | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| ProductName | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Alice Mutton | | | | | | | | |
| Aniseed Syrup | | 13 | | | | | | |
| Boston Crab Meat | | | | | | | | 123 |
| Camembert Pierrot | | | | 19 | | | | |
| Carnarvon Tigers | | | | | | | | 42 |
| Chai | 39 | | | | | | | |
| Chang | 17 | | | | | | | |
| Chartreuse verte | 69 | | | | | | | |
| Chef Anton's Cajun Seasoning | | 53 | | | | | | |
| Chef Anton's Gumbo Mix | | | | | | | | |
| Chocolade | | | 15 | | | | | |
| Côte de Blaye | 17 | | | | | | | |
| Escargots de Bourgogne | | | | | | | | 62 |

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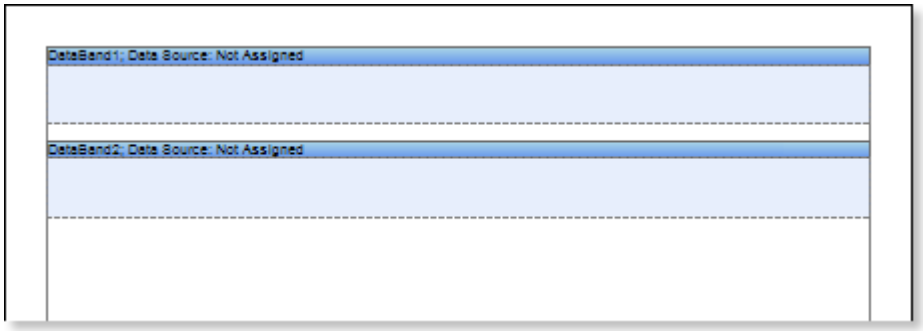
## 3.9. Cross-Tab Report in DataBand

If the **Cross-Tab** component is placed in the **DataBand**, then when designing a report, this component will be constructed as part of the **DataBand**. Because the **Cross-Tab** component placed in the **DataBand** is designed as an element of the **DataBand**, then, when designing a report, this component will be printed as many times as the **DataBand**. Consider an example of building a report with the **Cross-Tab** in the **DataBand**. In this example, **Cross-Tab** will display the detailed entries in the **Master-Detail** report. Do the following steps in order to build a report with the **Cross-Tab** in the **DataBand**:

1. Run the designer;
2. Connect data:
    2.1. Create **New Connection**;
    2.2. Create **New Data Source**;

3. Create the **Relation** between data sources. If the **Relation** is not created and/or the **Relation** property will be not filled for the **Detail** data source, then, for each **Master** entries, all **Detail** entries will not be output;
4. Put two **DataBands** on a page of a report template;




5. Edit **DataBand1** and **DataBand2**:
    5.1 Align the **DataBands** vertically;
    5.2 Change the value of the required properties. For example, for the **DataBand1**, which is a **Master** component in the **Master-Detail** report, set the **Print If Detail Empty** property to **true**, if you want the **Master** entries be printed in any case, even if the **Detail** entries are not available. And for the **DataBand2**, which is a **Detail** component in the **Master-Detail** report, set the **CanShrink** property to **true**, if it is necessary for this band to be shrunk;
    5.3 Change the background color of the **DataBand**;
    5.4 If necessary, set **Borders** of the **DataBand**;

6. Specify data sources for **DataBands**, as well as assign the **Master** component. In our example, the **Master** component is the upper **DataBand1**, and hence indicate the **DataBand1** in the **Master Component** tab of the **Data Setup** dialog box of the lower **DataBand2** as the **Master** component;
7. Fill in the **Data Relation** property of the **DataBand**, which is the **Detail** component, in our case, this is the **DataBand2**:

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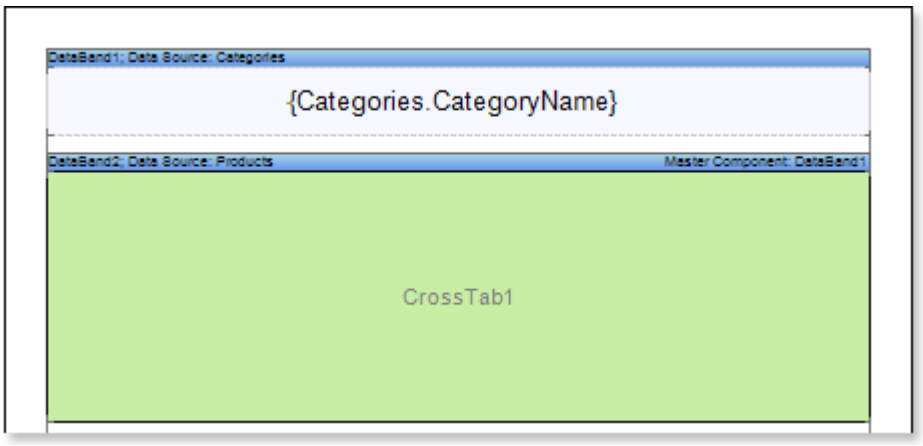
| Data Relation | Categories |
|---|---|

8. Put the text component with an expression. Where the expression is a reference to the data field. For example: the **DataBand1**, that is the **Master** component, put the text component with the **{Categories.CategoryName}** expression;
9. Edit text and text components located in the **DataBand**:
   9.1. Drag the text component to the required place in the **DataBand**;
   9.2. Align the text in a text component;
   9.3. Change the value of the required properties. For example to set the **Word Wrap** property to **true**, if you want the text be wrapped;
   9.4. Set **Borders** of a text component, if required.
   9.5. Change the border color.

10. Put the **Cross-Tab** component in the **DataBand**. In this case, the **Cross-Tab** component will be located on the **DataBand2**, that is the **Detail** component of the report.




11. Edit the **Cross-Tab** component:
   11.1 Change values of the **Cross-Tab** properties. For example, set the **Can Shrink** property to **true**, if you want the **Cross-Tab** component be shrunk;

12. Specify the data source for the band of the **Cross-Tab** component, for example, using the **Data Source:**

| Data Source | Products |
|---|---|

13. Call the **Cross-Tab Designer**, for example, by selecting **Edit ..** (**Design..**) of the context menu of the cross-table component.

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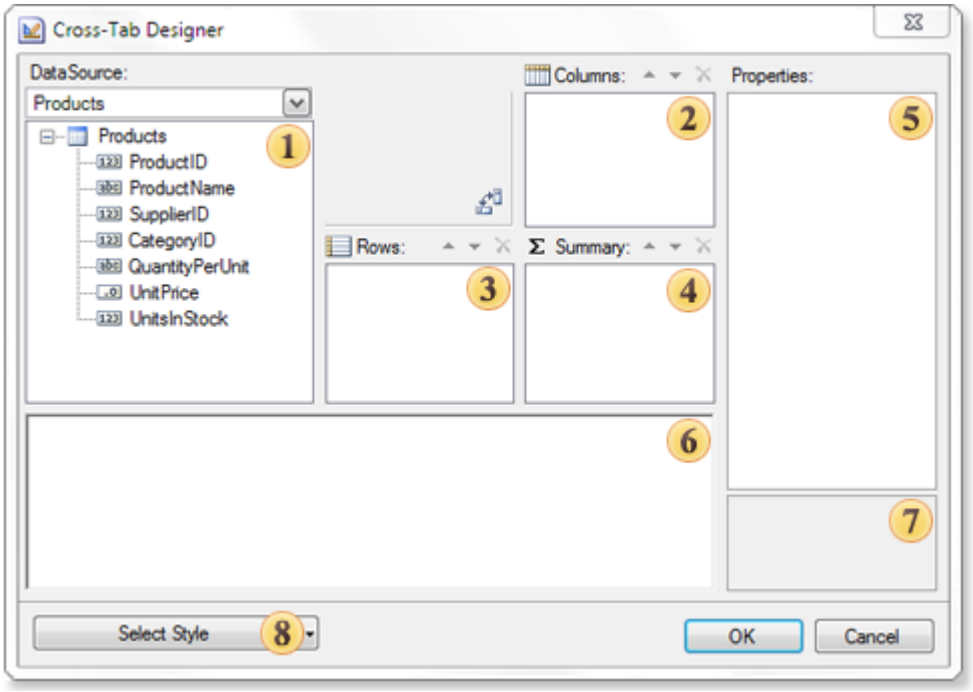


1 The **DataSource** field. This field displays data columns of the selected data source;
2 The **Columns** field. This field displays a list of columns of the data source for the entries by which columns in the cross-table will be formed;
3 The **Rows** field. This field displays a list of columns of the data source for the entries by which lines in the cross-table will be formed;
4 The **Summary** field. This field displays a list of columns of the data source for the entries by which summaries in the cross-table will be formed;
5 The **Properties** field. This field displays the properties of the selected element of cross-table;
6 The **Cross-Tab Cells** field. This field displays cells of the cross-table;
7 The **Description** field. This field displays a short description of the selected properties of the cross-table item;
8 The **Select Style** button. When you click, the drop-down list of styles appears for the cross-table.

14. Do the following in the **Cross-Tab Designer** editor:
    14.1. Add a data column from the 1 **DataSource** field to the 2 **Columns** field of the cross-table. Add a data column from the **DataSource** field to the **Columns** field of the cross-table. For example, add the **CategoryID** data column of data to the **Columns** field of the cross-table, and then one entry from this data column will correspond to one column in the rendered cross-table;
    14.2. Add a data column of the data source from the 1 **DataSource** field to the 3 **Rows** field of the cross-table. For example, add the **ProductName** data column to the **Rows** field of the cross-table, and then one entry from this data column will correspond to one row in the rendered cross-table, i.e. the number of entries in this data column will be equal to the number of rows in the cross-table;
    14.3. Add a data column from the 1 **DataSource** field to the 4 **Summary** field of the cross-table. For example, add the **UnitInStock** data column to the **Summary** field of the cross-table, i.e. entries in this data column will be summary entries in the cross-table;

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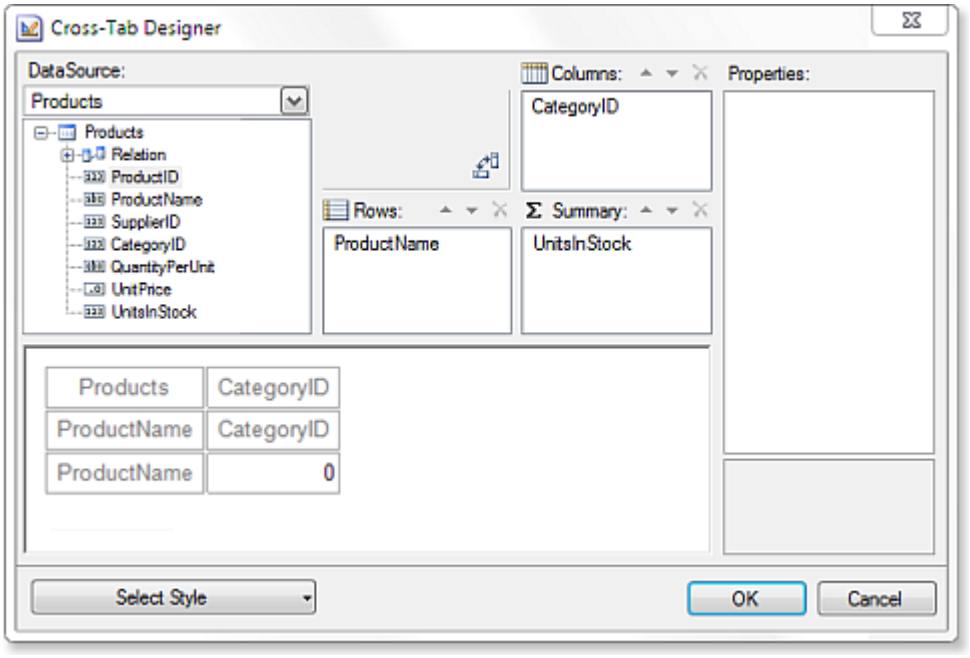
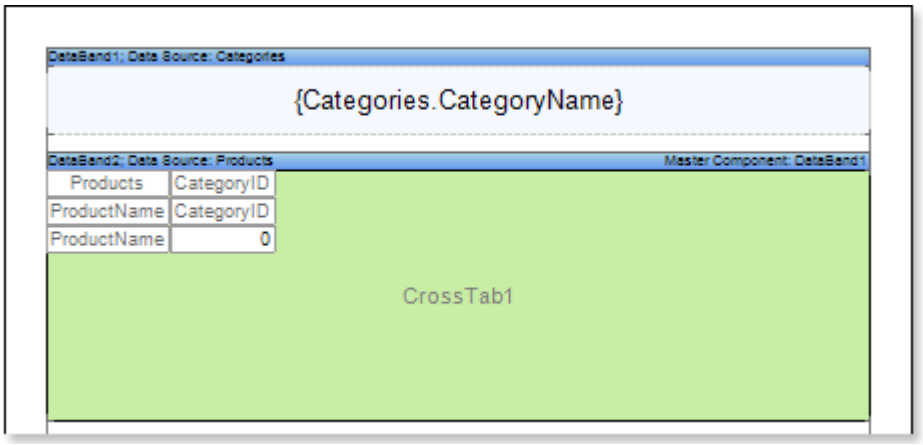



15. Press the **OK** button in order to save your changes and go back to the report template with the cross-table.




16. Render a report. Click the **Preview** button or call the **Viewer** by pressing **F5** or select the **Preview** of the menu item. The picture below shows an example of the cross-table report:

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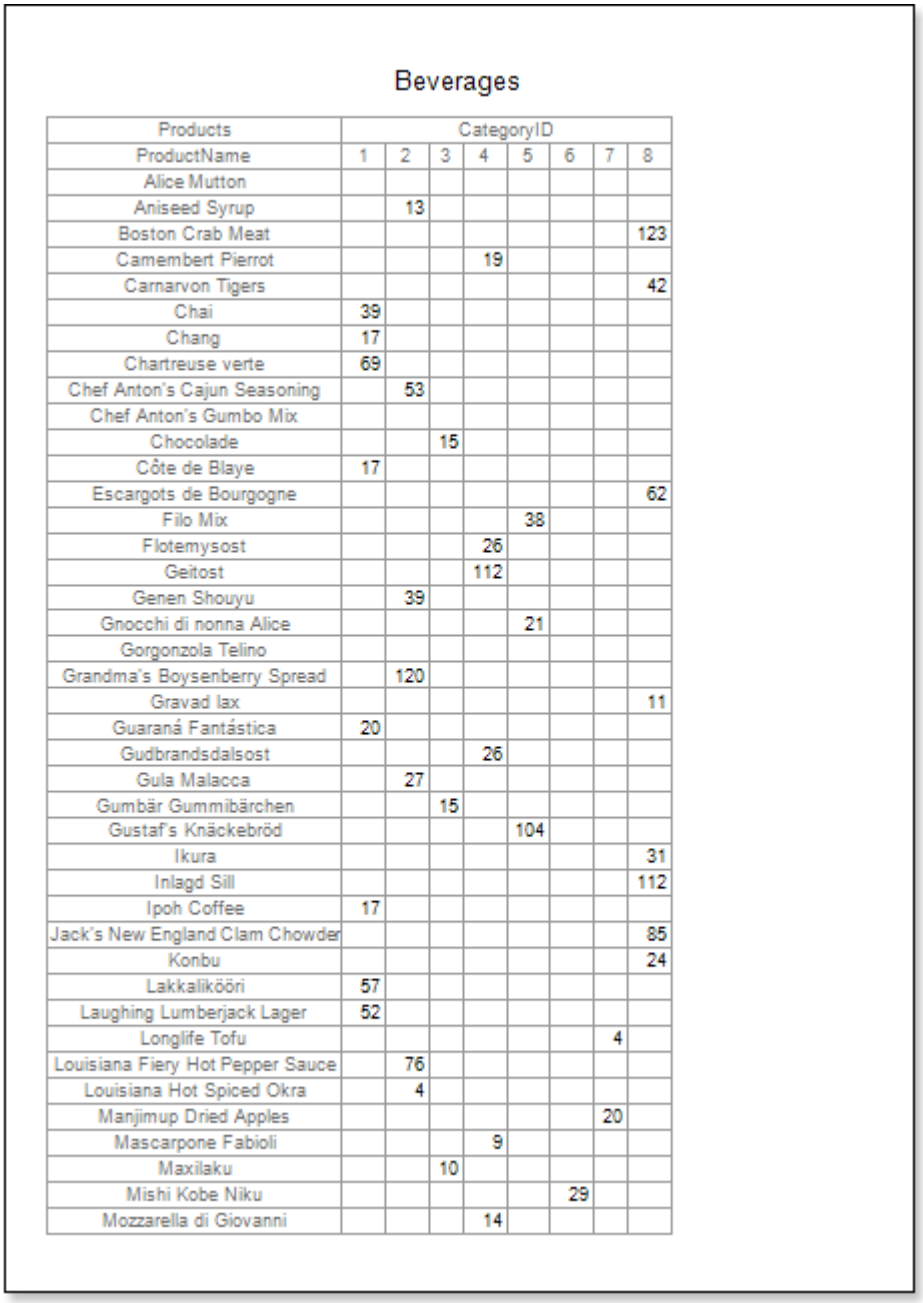

Beverages

| Products | CategoryID | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| ProductName | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Alice Mutton | | | | | | | | |
| Aniseed Syrup | | 13 | | | | | | |
| Boston Crab Meat | | | | | | | | 123 |
| Camembert Pierrot | | | | 19 | | | | |
| Carnarvon Tigers | | | | | | | | 42 |
| Chai | 39 | | | | | | | |
| Chang | 17 | | | | | | | |
| Chartreuse verte | 69 | | | | | | | |
| Chef Anton's Cajun Seasoning | | 53 | | | | | | |
| Chef Anton's Gumbo Mix | | | | | | | | |
| Chocolade | | | 15 | | | | | |
| Côte de Blaye | 17 | | | | | | | |
| Escargots de Bourgogne | | | | | | | | 62 |
| Filo Mix | | | | | 38 | | | |
| Flotemysost | | | | 26 | | | | |
| Geitost | | | | 112 | | | | |
| Genen Shouyu | | 39 | | | | | | |
| Gnocchi di nonna Alice | | | | | 21 | | | |
| Gorgonzola Telino | | | | | | | | |
| Grandma's Boysenberry Spread | | 120 | | | | | | |
| Gravad lax | | | | | | | | 11 |
| Guaraná Fantástica | 20 | | | | | | | |
| Gudbrandsdalsost | | | | 26 | | | | |
| Gula Malacca | | 27 | | | | | | |
| Gumbär Gummibärchen | | | 15 | | | | | |
| Gustaf's Knäckebröd | | | | | 104 | | | |
| Ikura | | | | | | | | 31 |
| Inlagd Sill | | | | | | | | 112 |
| Ipoh Coffee | 17 | | | | | | | |
| Jack's New England Clam Chowder | | | | | | | | 85 |
| Konbu | | | | | | | | 24 |
| Lakkalikööri | 57 | | | | | | | |
| Laughing Lumberjack Lager | 52 | | | | | | | |
| Longlife Tofu | | | | | | | 4 | |
| Louisiana Fiery Hot Pepper Sauce | | 76 | | | | | | |
| Louisiana Hot Spiced Okra | | 4 | | | | | | |
| Manjimup Dried Apples | | | | | | | 20 | |
| Mascarpone Fabioli | | | | 9 | | | | |
| Maxilaku | | | 10 | | | | | |
| Mishi Kobe Niku | | | | | | 29 | | |
| Mozzarella di Giovanni | | | | 14 | | | | |

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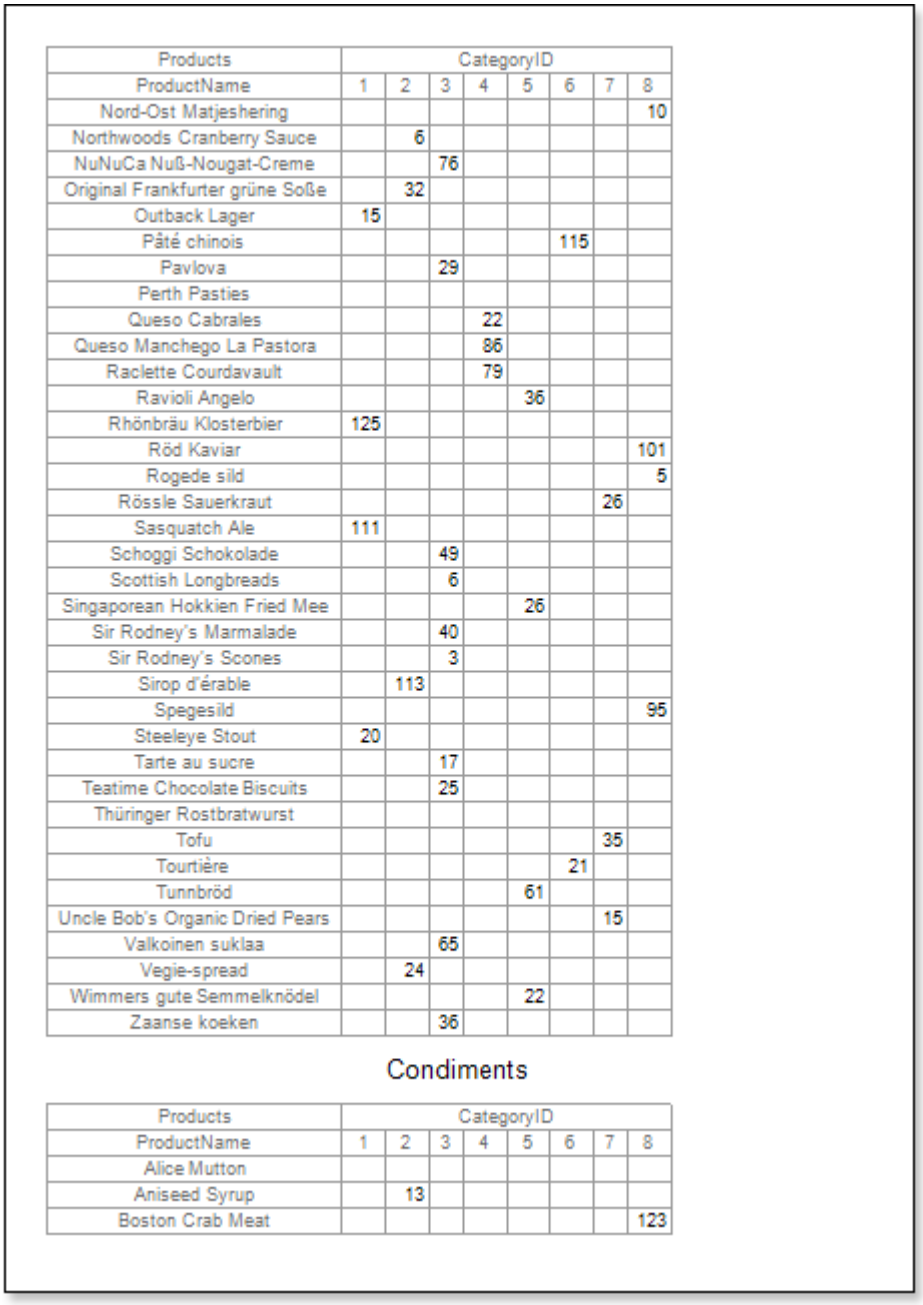

| Products | CategoryID | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| ProductName | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Nord-Ost Matjeshering | | | | | | | | 10 |
| Northwoods Cranberry Sauce | | 6 | | | | | | |
| NuNuCa Nuß-Nougat-Creme | | | 76 | | | | | |
| Original Frankfurter grüne Soße | | 32 | | | | | | |
| Outback Lager | 15 | | | | | | | |
| Pâté chinois | | | | | | 115 | | |
| Pavlova | | | 29 | | | | | |
| Perth Pasties | | | | | | | | |
| Queso Cabrales | | | | 22 | | | | |
| Queso Manchego La Pastora | | | | 86 | | | | |
| Raclette Courdavault | | | | 79 | | | | |
| Ravioli Angelo | | | | | 36 | | | |
| Rhönbräu Klosterbier | 125 | | | | | | | |
| Röd Kaviar | | | | | | | | 101 |
| Rogede sild | | | | | | | | 5 |
| Rössle Sauerkraut | | | | | | | 26 | |
| Sasquatch Ale | 111 | | | | | | | |
| Schoggi Schokolade | | | 49 | | | | | |
| Scottish Longbreads | | | 6 | | | | | |
| Singaporean Hokkien Fried Mee | | | | | 26 | | | |
| Sir Rodney's Marmalade | | | 40 | | | | | |
| Sir Rodney's Scones | | | 3 | | | | | |
| Sirop d'érable | | 113 | | | | | | |
| Spegesild | | | | | | | | 95 |
| Steeleye Stout | 20 | | | | | | | |
| Tarte au sucre | | | 17 | | | | | |
| Teatime Chocolate Biscuits | | | 25 | | | | | |
| Thüringer Rostbratwurst | | | | | | | | |
| Tofu | | | | | | | 35 | |
| Tourtière | | | | | | 21 | | |
| Tunnbröd | | | | | 61 | | | |
| Uncle Bob's Organic Dried Pears | | | | | | | 15 | |
| Valkoinen suklaa | | | 65 | | | | | |
| Vegie-spread | | 24 | | | | | | |
| Wimmers gute Semmelknödel | | | | | 22 | | | |
| Zaanse koeken | | | 36 | | | | | |

Condiments

| Products | CategoryID | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| ProductName | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Alice Mutton | | | | | | | | |
| Aniseed Syrup | | 13 | | | | | | |
| Boston Crab Meat | | | | | | | | 123 |

17. Go back to the report template;
18. If necessary, edit the text component in the **DataBand**:
    18.1. Change the background color of the text component;
    18.2. Change the style, color, and text type.

19. Edit cells in the report template:
    19.1. Change the font settings: type, style, size;
    19.2. Change the background color of a cell;
    19.3. Set the **Word Wrap** property to **true**, if you want the text to be wrapped;
    19.4. Set **Borders** if necessary;
    19.5. Change the border color.

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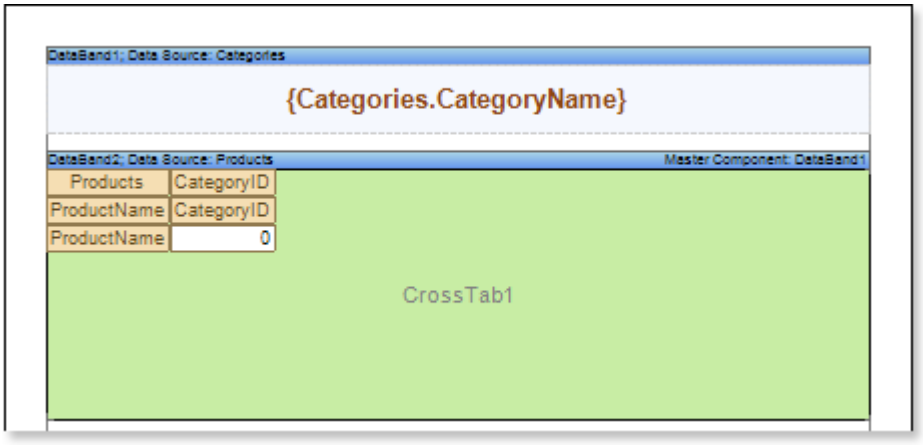
19.6. Change the background color of cells, etc.




20. Render a report. Click the **Preview** button or call the **Viewer** by pressing **F5** or select the **Preview** of the menu item. The picture below shows an example of the cross-table report after editing cells of the report template:

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## Beverages

| Products | CategoryID | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| ProductName | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Alice Mutton | | | | | | | | |
| Aniseed Syrup | | 13 | | | | | | |
| Boston Crab Meat | | | | | | | | 123 |
| Camembert Pierrot | | | | 19 | | | | |
| Carnarvon Tigers | | | | | | | | 42 |
| Chai | 39 | | | | | | | |
| Chang | 17 | | | | | | | |
| Chartreuse verte | 69 | | | | | | | |
| Chef Anton's Cajun Seasoning | | 53 | | | | | | |
| Chef Anton's Gumbo Mix | | | | | | | | |
| Chocolade | | | 15 | | | | | |
| Côte de Blaye | 17 | | | | | | | |
| Escargots de Bourgogne | | | | | | | | 62 |
| Filo Mix | | | | | 38 | | | |
| Flotemysost | | | | 26 | | | | |
| Geitost | | | | 112 | | | | |
| Genen Shouyu | | 39 | | | | | | |
| Gnocchi di nonna Alice | | | | | 21 | | | |
| Gorgonzola Telino | | | | | | | | |
| Grandma's Boysenberry Spread | | 120 | | | | | | |
| Gravad lax | | | | | | | | 11 |
| Guaraná Fantástica | 20 | | | | | | | |
| Gudbrandsdalsost | | | | 26 | | | | |
| Gula Malacca | | 27 | | | | | | |
| Gumbär Gummibärchen | | | 15 | | | | | |
| Gustaf's Knäckebröd | | | | | 104 | | | |
| Ikura | | | | | | | | 31 |
| Inlagd Sill | | | | | | | | 112 |
| Ipoh Coffee | 17 | | | | | | | |
| Jack's New England Clam Chowder | | | | | | | | 85 |
| Konbu | | | | | | | | 24 |
| Lakkalikööri | 57 | | | | | | | |
| Laughing Lumberjack Lager | 52 | | | | | | | |
| Longlife Tofu | | | | | | | 4 | |
| Louisiana Fiery Hot Pepper Sauce | | 76 | | | | | | |
| Louisiana Hot Spiced Okra | | 4 | | | | | | |
| Manjimup Dried Apples | | | | | | | 20 | |
| Mascarpone Fabioli | | | | 9 | | | | |
| Maxilaku | | | 10 | | | | | |
| Mishi Kobe Niku | | | | | | 29 | | |
| Mozzarella di Giovanni | | | | 14 | | | | |

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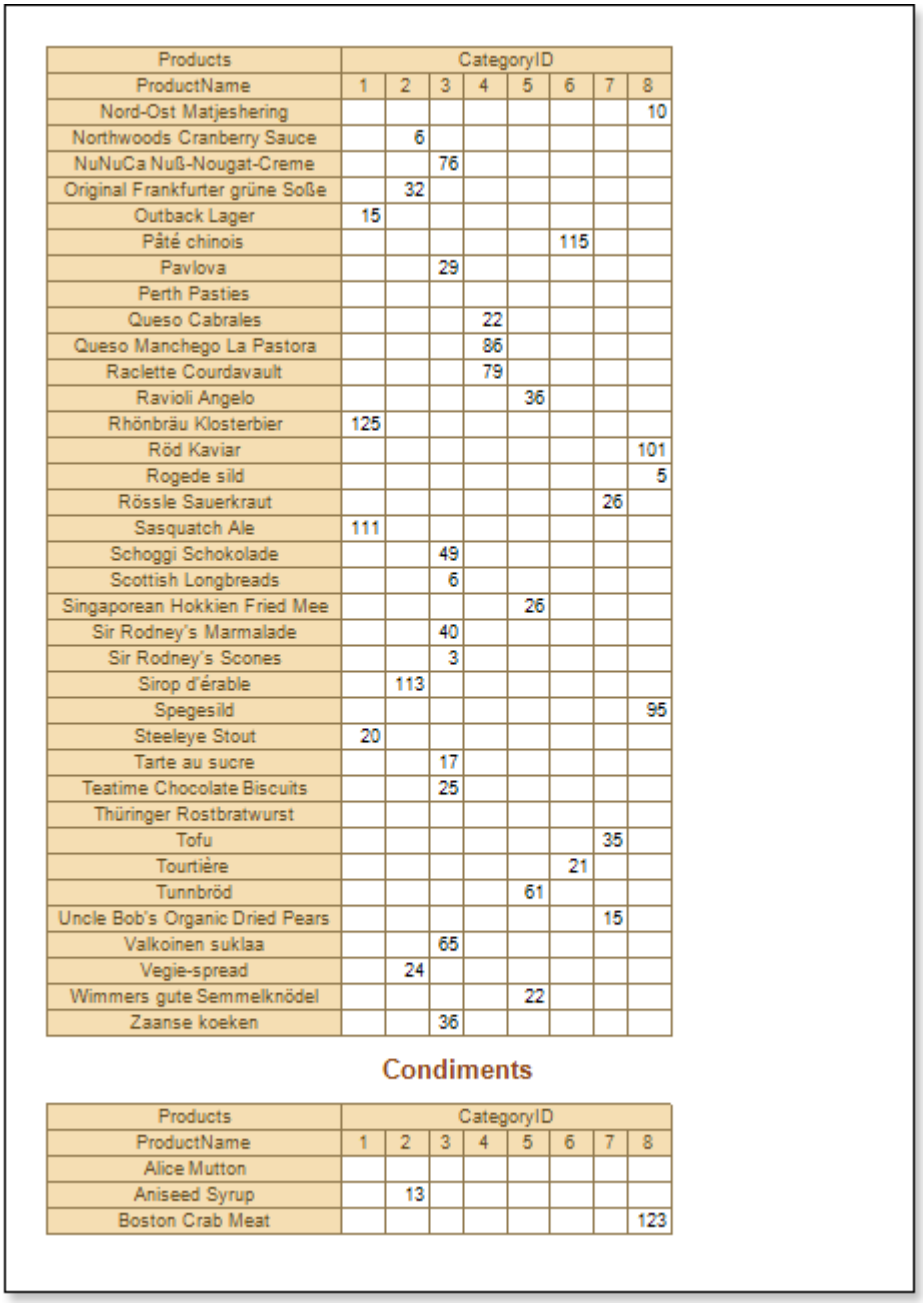

| Products | CategoryID | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| ProductName | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Nord-Ost Matjeshering | | | | | | | | 10 |
| Northwoods Cranberry Sauce | | 6 | | | | | | |
| NuNuCa Nuß-Nougat-Creme | | | 76 | | | | | |
| Original Frankfurter grüne Soße | | 32 | | | | | | |
| Outback Lager | 15 | | | | | | | |
| Pâté chinois | | | | | | 115 | | |
| Pavlova | | | 29 | | | | | |
| Perth Pasties | | | | | | | | |
| Queso Cabrales | | | | 22 | | | | |
| Queso Manchego La Pastora | | | | 86 | | | | |
| Raclette Courdavault | | | | 79 | | | | |
| Ravioli Angelo | | | | | 36 | | | |
| Rhönbräu Klosterbier | 125 | | | | | | | |
| Röd Kaviar | | | | | | | | 101 |
| Rogede sild | | | | | | | | 5 |
| Rössle Sauerkraut | | | | | | | 26 | |
| Sasquatch Ale | 111 | | | | | | | |
| Schoggi Schokolade | | | 49 | | | | | |
| Scottish Longbreads | | | 6 | | | | | |
| Singaporean Hokkien Fried Mee | | | | | 26 | | | |
| Sir Rodney's Marmalade | | | 40 | | | | | |
| Sir Rodney's Scones | | | 3 | | | | | |
| Sirop d'érable | | 113 | | | | | | |
| Spegesild | | | | | | | | 95 |
| Steeleye Stout | 20 | | | | | | | |
| Tarte au sucre | | | 17 | | | | | |
| Teatime Chocolate Biscuits | | | 25 | | | | | |
| Thüringer Rostbratwurst | | | | | | | | |
| Tofu | | | | | | | 35 | |
| Tourtière | | | | | | 21 | | |
| Tunnbröd | | | | | 61 | | | |
| Uncle Bob's Organic Dried Pears | | | | | | | 15 | |
| Valkoinen suklaa | | | 65 | | | | | |
| Vegie-spread | | 24 | | | | | | |
| Wimmers gute Semmelknödel | | | | | 22 | | | |
| Zaanse koeken | | | 36 | | | | | |

Condiments

| Products | CategoryID | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| ProductName | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Alice Mutton | | | | | | | | |
| Aniseed Syrup | | 13 | | | | | | |
| Boston Crab Meat | | | | | | | | 123 |

## Adding styles

1. Go back to the report template;
2. Invoke the **Style Designer**;

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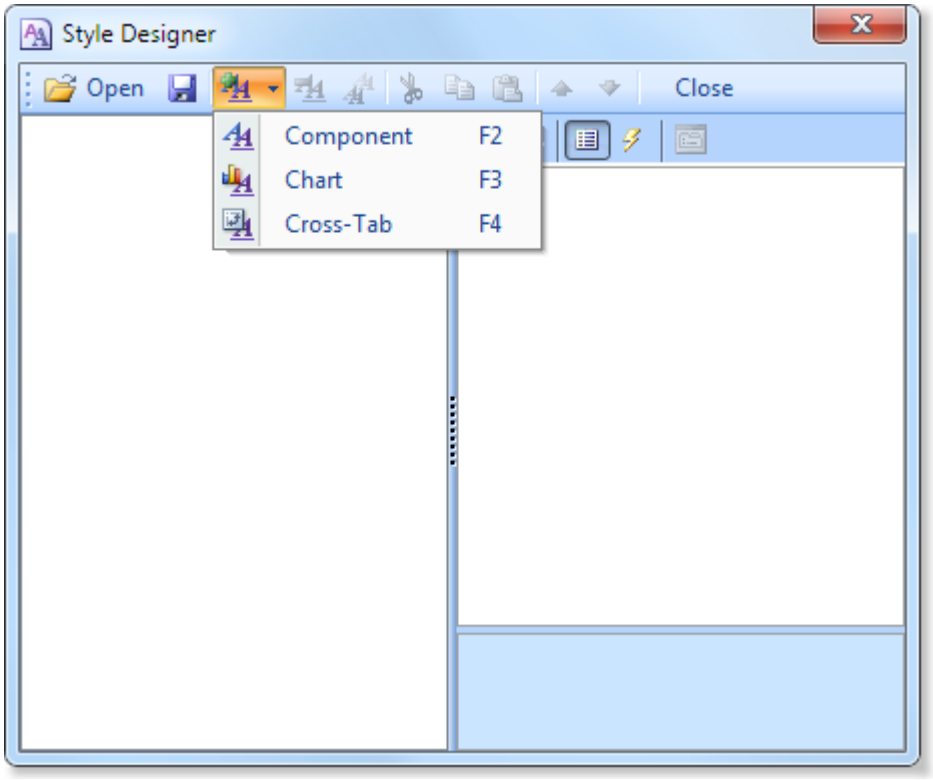


Click the **Add Style** button to start creating a style. Select **Cross-Tab** from the drop down list. Call the new style as **Style for Cross-Tab**. To create a custom style it is necessary to change the **Color** property, where the value of this property and is a color scheme.

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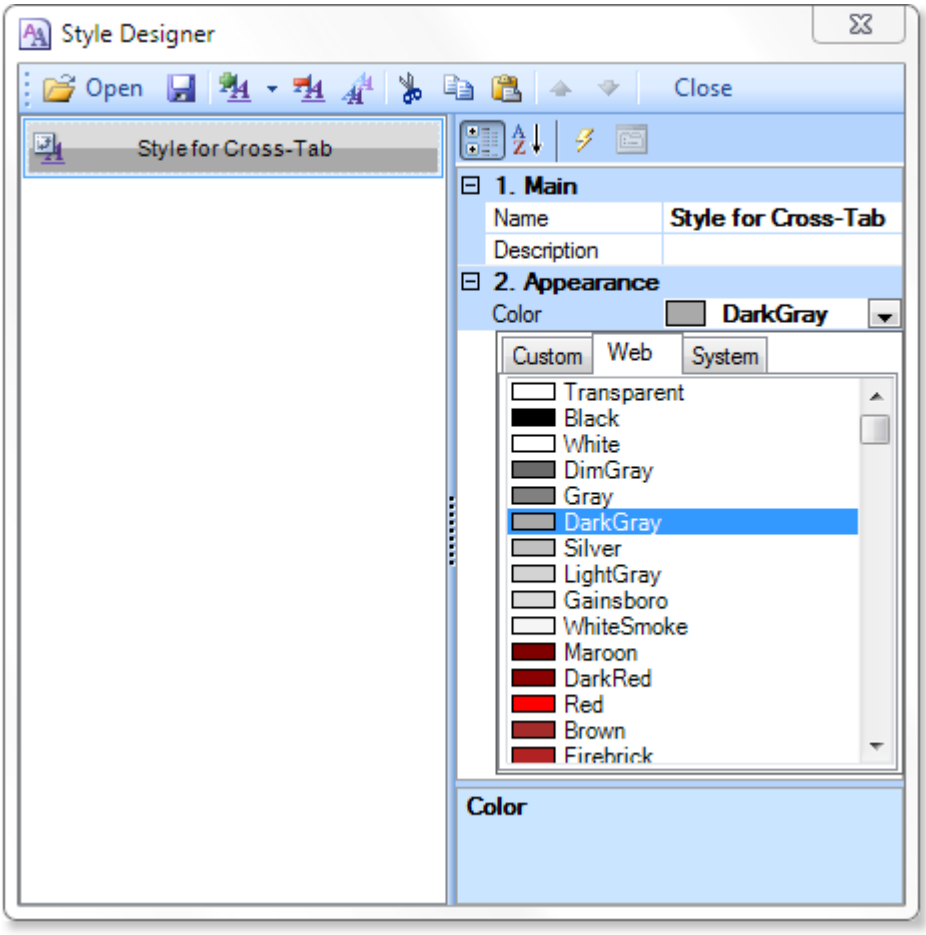


After the style is created, press the **Close** button. In the list of values of the **Select Style** button in the editor of the cross-table, a custom style will be displayed. In our case, this is the **Style for Cross-Tab**. Select this value;

3. Render a report. Click the **Preview** button or call the **Viewer** by pressing **F5** or select the **Preview** of the menu item. Now you can see the result of the rendered report:

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## Beverages

| Products | CategoryID | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| ProductName | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Alice Mutton | | | | | | | | |
| Aniseed Syrup | | 13 | | | | | | |
| Boston Crab Meat | | | | | | | | 123 |
| Camembert Pierrot | | | | 19 | | | | |
| Carnarvon Tigers | | | | | | | | 42 |
| Chai | 39 | | | | | | | |
| Chang | 17 | | | | | | | |
| Chartreuse verte | 69 | | | | | | | |
| Chef Anton's Cajun Seasoning | | 53 | | | | | | |
| Chef Anton's Gumbo Mix | | | | | | | | |
| Chocolade | | | 15 | | | | | |
| Côte de Blaye | 17 | | | | | | | |
| Escargots de Bourgogne | | | | | | | | 62 |
| Filo Mix | | | | | 38 | | | |
| Flotemysost | | | | 26 | | | | |
| Geitost | | | | 112 | | | | |
| Genen Shouyu | | 39 | | | | | | |
| Gnocchi di nonna Alice | | | | | 21 | | | |
| Gorgonzola Telino | | | | | | | | |
| Grandma's Boysenberry Spread | | 120 | | | | | | |
| Gravad lax | | | | | | | | 11 |
| Guaraná Fantástica | 20 | | | | | | | |
| Gudbrandsdalsost | | | | 26 | | | | |
| Gula Malacca | | 27 | | | | | | |
| Gumbär Gummibärchen | | | 15 | | | | | |
| Gustaf's Knäckebröd | | | | | 104 | | | |
| Ikura | | | | | | | | 31 |
| Inlagd Sill | | | | | | | | 112 |
| Ipoh Coffee | 17 | | | | | | | |
| Jack's New England Clam Chowder | | | | | | | | 85 |
| Konbu | | | | | | | | 24 |
| Lakkalikööri | 57 | | | | | | | |
| Laughing Lumberjack Lager | 52 | | | | | | | |
| Longlife Tofu | | | | | | | 4 | |
| Louisiana Fiery Hot Pepper Sauce | | 76 | | | | | | |
| Louisiana Hot Spiced Okra | | 4 | | | | | | |
| Manjimup Dried Apples | | | | | | | 20 | |
| Mascarpone Fabioli | | | | 9 | | | | |
| Maxilaku | | | 10 | | | | | |
| Mishi Kobe Niku | | | | | | 29 | | |
| Mozzarella di Giovanni | | | | 14 | | | | |

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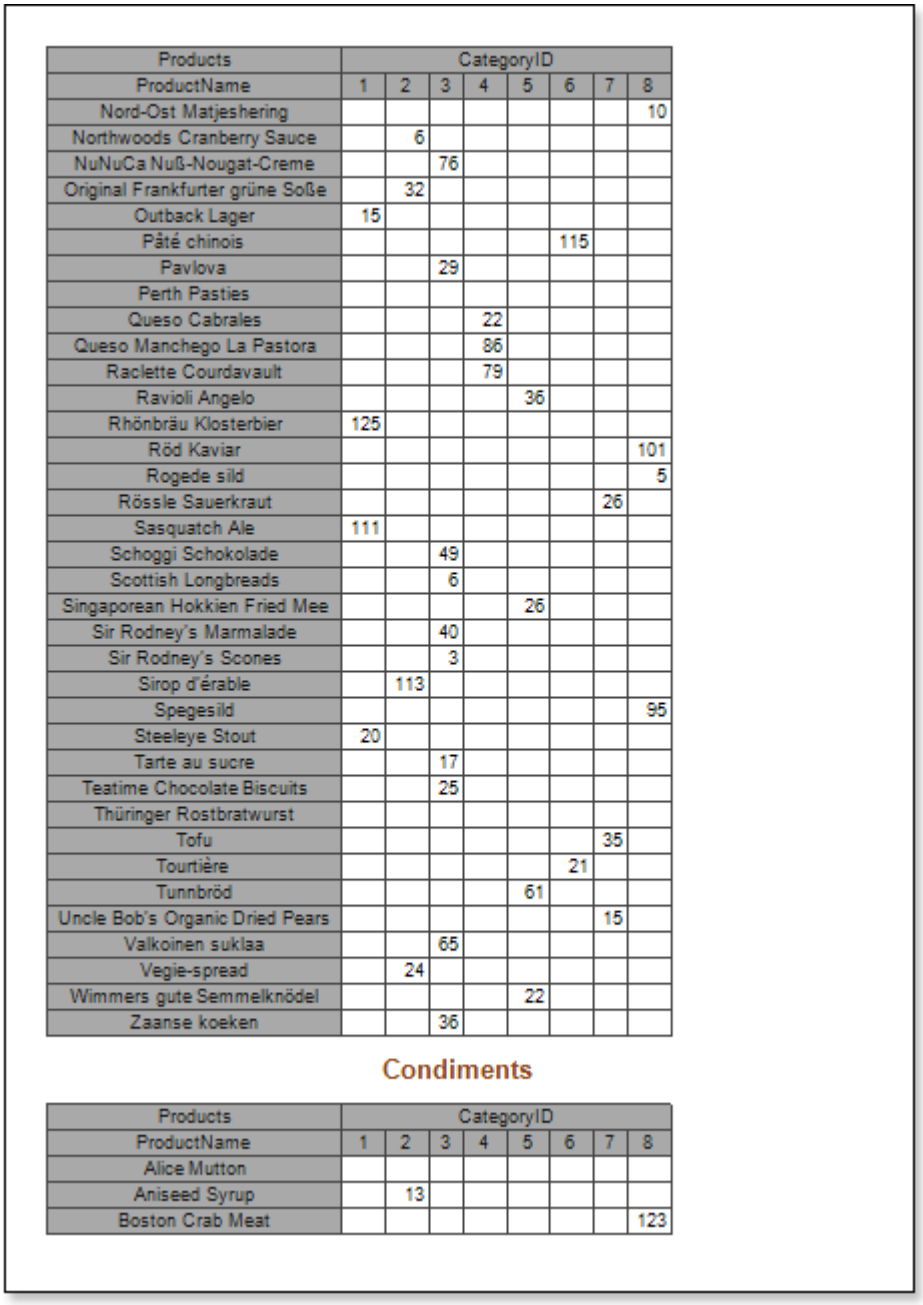

| Products | CategoryID | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| ProductName | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Nord-Ost Matjeshering | | | | | | | | 10 |
| Northwoods Cranberry Sauce | | 6 | | | | | | |
| NuNuCa Nuß-Nougat-Creme | | | 76 | | | | | |
| Original Frankfurter grüne Soße | | 32 | | | | | | |
| Outback Lager | 15 | | | | | | | |
| Pâté chinois | | | | | | 115 | | |
| Pavlova | | | 29 | | | | | |
| Perth Pasties | | | | | | | | |
| Queso Cabrales | | | | 22 | | | | |
| Queso Manchego La Pastora | | | | 86 | | | | |
| Raclette Courdavault | | | | 79 | | | | |
| Ravioli Angelo | | | | | 36 | | | |
| Rhönbräu Klosterbier | 125 | | | | | | | |
| Röd Kaviar | | | | | | | | 101 |
| Rogede sild | | | | | | | | 5 |
| Rössle Sauerkraut | | | | | | | 26 | |
| Sasquatch Ale | 111 | | | | | | | |
| Schoggi Schokolade | | | 49 | | | | | |
| Scottish Longbreads | | | 6 | | | | | |
| Singaporean Hokkien Fried Mee | | | | | 26 | | | |
| Sir Rodney's Marmalade | | | 40 | | | | | |
| Sir Rodney's Scones | | | 3 | | | | | |
| Sirop d'érable | | 113 | | | | | | |
| Spegesild | | | | | | | | 95 |
| Steeleye Stout | 20 | | | | | | | |
| Tarte au sucre | | | 17 | | | | | |
| Teatime Chocolate Biscuits | | | 25 | | | | | |
| Thüringer Rostbratwurst | | | | | | | | |
| Tofu | | | | | | | 35 | |
| Tourtière | | | | | | 21 | | |
| Tunnbröd | | | | | 61 | | | |
| Uncle Bob's Organic Dried Pears | | | | | | | 15 | |
| Valkoinen suklaa | | | 65 | | | | | |
| Vegie-spread | | 24 | | | | | | |
| Wimmers gute Semmelknödel | | | | | 22 | | | |
| Zaanse koeken | | | 36 | | | | | |

Condiments

| Products | CategoryID | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| ProductName | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Alice Mutton | | | | | | | | |
| Aniseed Syrup | | 13 | | | | | | |
| Boston Crab Meat | | | | | | | | 123 |

## 3.10. Hierarchical Report

Do the following steps to create a hierarchical report:

1. Run the designer;
2. Connect data:
    2.1. Create **New Connection**;

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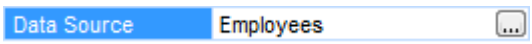
2.2. Create **New Data Source**;

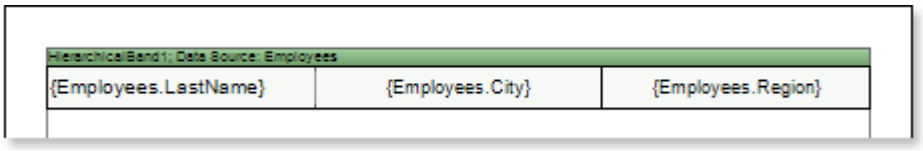
3. Put the **HierarchicalBand** on a page of the report template**.**

4. Edit the **HierarchicalBand**:
   4.1. Align the **HierarchicalBand** by height;
   4.2. Set the properties of the **HierarchicalBand**. For example, set the **Can Break** property to **true**, if it is necessary for the **HierarchicalBand** to be broken;
   4.3. Set the background of the **HierarchicalBand**;
   4.4. Set the **Borders** of the **HierarchicalBand**;
   4.5. Set the border color.

5. Set the data source of the **HierarchicalBand** using the **Data Source** property:




6. Put text components with expressions in the **HierarchicalBand**. Where the expression is a reference to the data field. For example, put three text component with expressions: **{Employees.LastName}, {Employees.City}**, and **{Employees.Region}**;
7. Edit text (**Text**) and text components (**TextBox**):
   7.1. Drag the text component to the required place in the **HierarchicalBand**;
   7.2. Set the font of the text: the size, style, color;
   7.3. Align the text component vertically and horizontally;
   7.4. Set the background color of the text component;
   7.5. Align text in the text component;
   7.6. Set values of the properties of a text component. For example, set the **Word Wrap** property to **true**, if you want the text to be wrapped;
   7.7. Set **Borders** of a text component.
   7.8. Set the border color.




8. Set the **KeyDataColum** property, i.e. select a data column on which an identification number of the data row will be assigned. In this case, select the **EmployeeID** data column:

9. Set the **MasterKeyDataColum** property, i.e. select a data column on which the reference to the table's primary key of the parent entry will be specified. In this case, select the **ReportsTo** data column:

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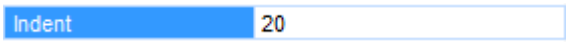
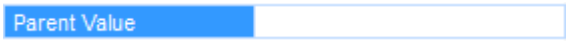
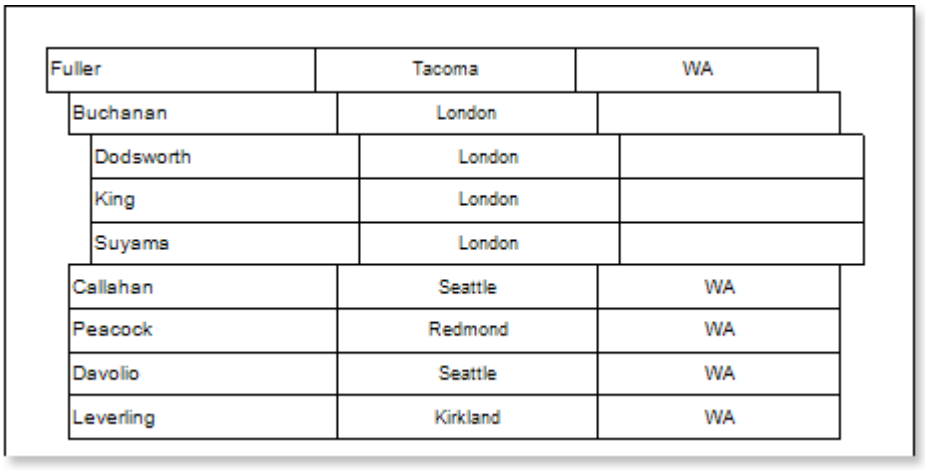
10. Set the **Indent** property, i.e. set an offset of the detail entry in relation to the parent one. In this example, the **Indent** property will be 20 units in the report (centimeters, inches, hundredths of inches, pixels);




11. Set the **ParentValue** property, i.e. indicate the entry, which will be a parent for all rows. If this property is not specified, the default value is used. By default, the **Parent Value** property is set to **null**. In this case, the value of the **ParentValue** property is not specified, so the default value is used:




12. Click the **Preview** button or call **Viewer**, using an **F5** hot key or the **Preview** menu item. After rendering a report, all references to data sources will be replaced with data from these sources. Data will be taken sequentially from the data source, which has been specified for this band. Number of copies of the **DataBand** in the report is equal to the number of rows in the data source.



| | | |
|---|---|---|
| Fuller | Tacoma | WA |
| Buchanan | London | |
| Dodsworth | London | |
| King | London | |
| Suyama | London | |
| Callahan | Seattle | WA |
| Peacock | Redmond | WA |
| Davolio | Seattle | WA |
| Leverling | Kirkland | WA |

13. Go back to the report template;
14. If necessary, add other bands into the report template, for example, **HeaderBand**;
15. Edit this band:
    15.1. Align the **HeaderBand** vertically;
    15.2. Set properties of the **HeaderBand**, if necessary;
    15.3. Set the background color of the **HeaderBand**;
    15.4. If necessary, set the **Borders**;
    15.5. Change the border color.

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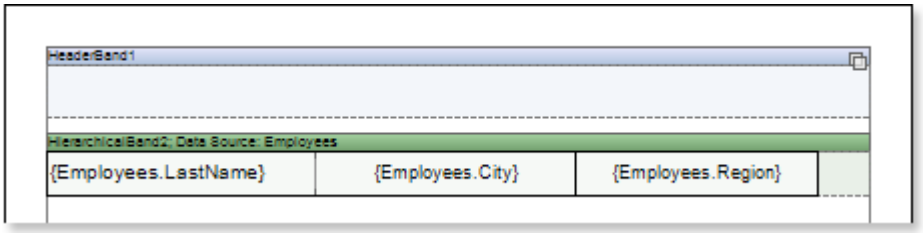
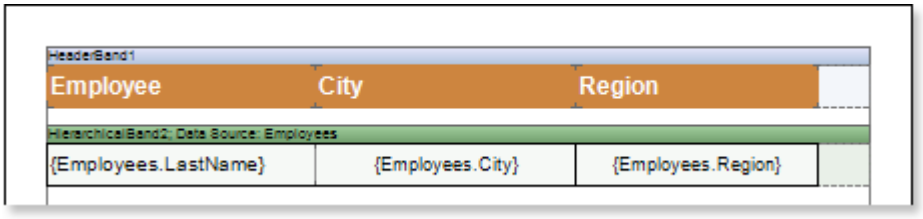
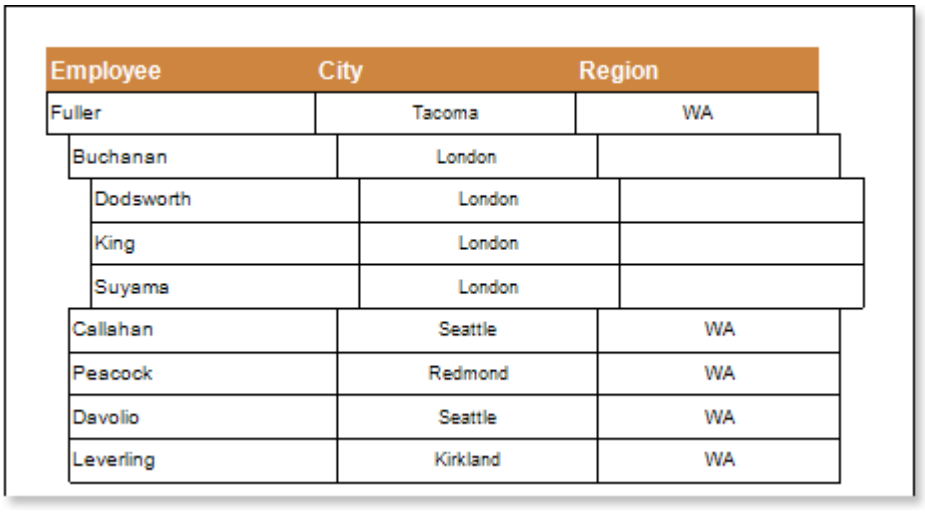



16. Put text components with the expressions. Where expressions in text components in the **HeaderBand** will be the data headers;
17. Edit text and text components:
    17.1. Drag the text component to the required place in the band;
    17.2. Set the font settings: size, style, color;
    17.3. Align the text component vertically and horizontally;
    17.4. Set the background color of the text component;
    17.5. Align the text in a text component;
    17.6. Set the value of properties of a text component, if necessary;
    17.7. If necessary, set **Borders** of a text component;
    17.8. Set the border color.




18. Click the **Preview** button or call **Viewer**, using an **F5** hot key or the **Preview** menu item. After rendering a report, all references to data sources will be replaced with data from these sources:



| Employee | City | Region |
|---|---|---|
| Fuller | Tacoma | WA |
| Buchanan | London | |
| Dodsworth | London | |
| King | London | |
| Suyama | London | |
| Callahan | Seattle | WA |
| Peacock | Redmond | WA |
| Davolio | Seattle | WA |
| Leverling | Kirkland | WA |

## Adding styles

1. Go back to the report template;
1. Select component. In our case this is the text component;

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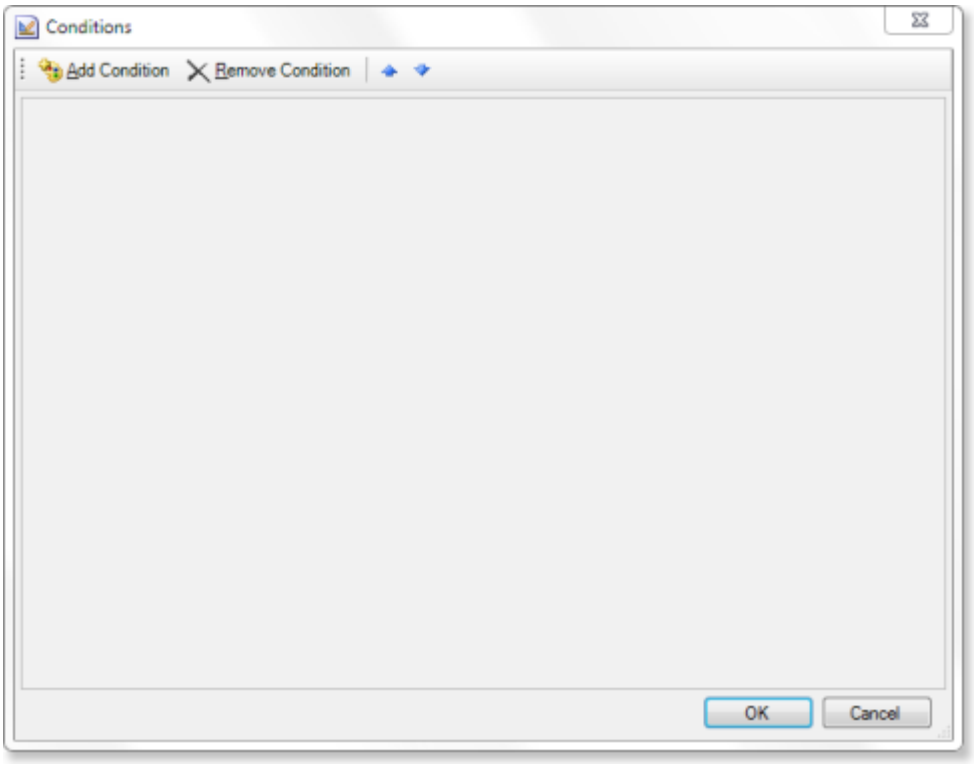
2. Invoke the **Conditions** dialog box. For example, click the **Conditions** button on the control panel.




3. To get started, you must click the **Add Condition** button and in the **Conditions** dialog box the condition and formatting options will be displayed. The condition can be of two types: **Value** and **Expression**. In this case, consider an example of a condition, such as **Expression**. The picture below shows an example of **Conditions** dialog box with options and conditions of formatting:

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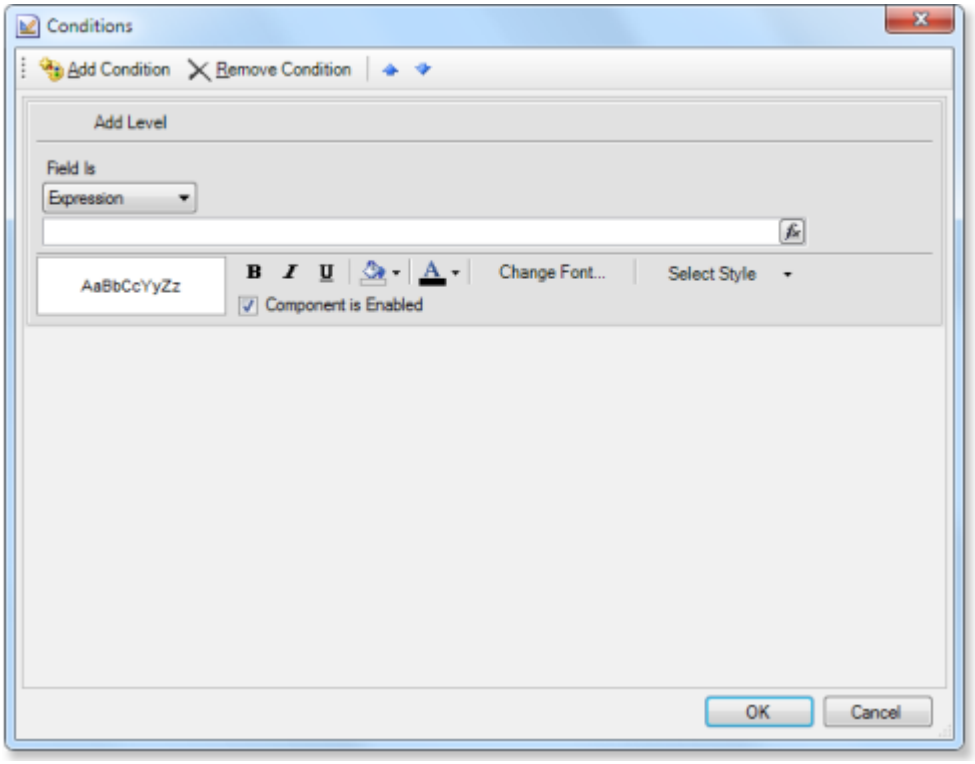
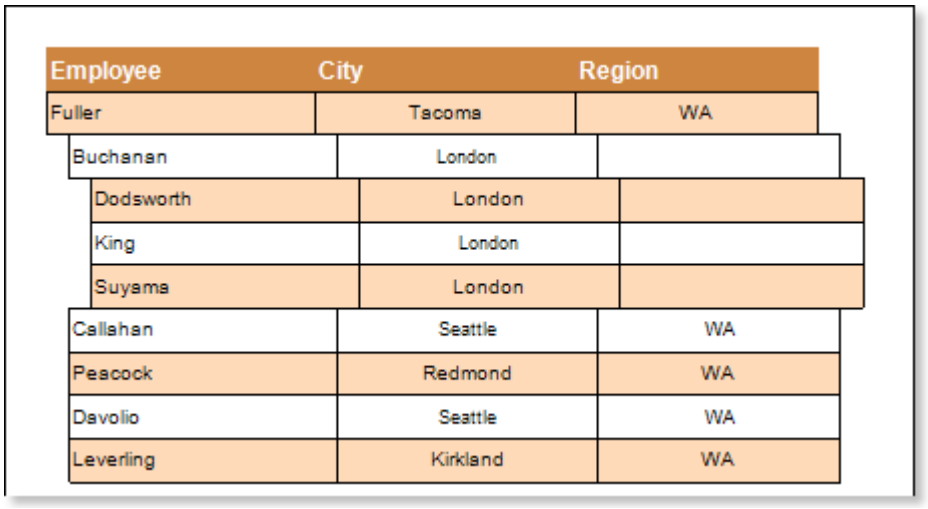



4. Specify the options of conditional formatting. In this case, to specify the condition means to specify the expression. For example, **Line%2 == 1**, and set the formatting means to change the background, for example, by pressing the **Back Color** button and selecting the drop-down list of values of the background color.
5. Click **OK**. It should also be noted that in order to odd and even rows have different styles, it is necessary to make a conditional formatting of each text component;
6. Render a report by clicking on the **Preview** tab or call the **Viewer** pressing **F5** or clicking **Preview** menu item.



| Employee | City | Region |
|---|---|---|
| Fuller | Tacoma | WA |
| Buchanan | London | |
| Dodsworth | London | |
| King | London | |
| Suyama | London | |
| Callahan | Seattle | WA |
| Peacock | Redmond | WA |
| Davolio | Seattle | WA |
| Leverling | Kirkland | WA |

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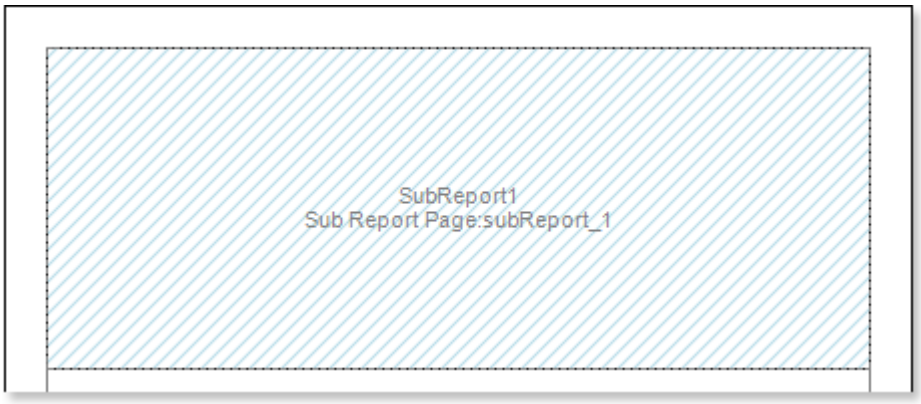
## 3.11. Sub-Report

Do the following steps to create a sub-report:

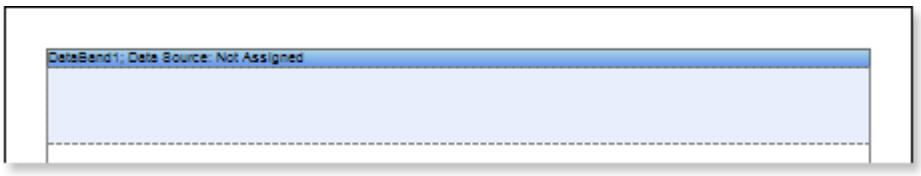
1. Run the designer;
2. Connect data:
   2.1. Create **New Connection**;
   2.2. Create **New Data Source**;

3. Add the **Sub-Report** component to a report on a page of the report template:

4. Edit the **Sub-Report** component:
   4.1. Stretch the **Sub-Report** component as seen on the picture below;
   4.2. Change the value of properties of **Sub-Report**. For example, set the **Keep Sub-Report Together** property to **true**, if you want the sub-report to be kept together;;
   4.3. Change the background color of the component.




5. Go to the sub-report page;
6. Add to the **DataBand** to the sub-report page**;**




7. Edit the **DataBand**:

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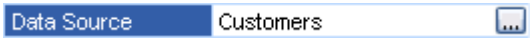
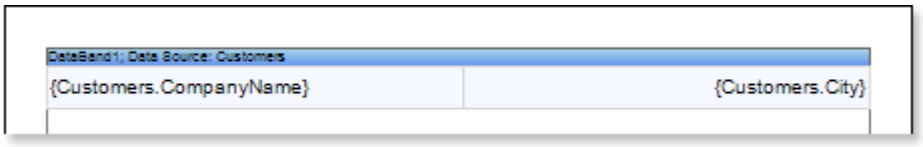
7.1. Align the **DataBand** vertically;
7.2. Change values of properties of the **DataBand**. For example, set the **CanBreak** property to **true**, if you want this band to be broken;
7.3. Change background color of the band;
7.4. Set **Borders**, if necessary;
7.5. Change the border color.

8. Specify the data source for the **DataBand** using the **Data Source** property:




9. Put text components with expressions in the **DataBand**. Where an expression is a reference to a data field. For example, put the following expressions to two text components: **{Customers.CompanyName}** and **{Customers.City}**;
10. Edit **Text** and **TextBoxes**:
10.1. Drag the text component to the required place in the **DataBand**;
10.2. Set the text font: size, style, color;
10.3. Align text component vertically and horizontally;
10.4. Set the background color of the text component;
10.5. Align text in the component;
10.6. Set values of the properties of text components. For example to set the **Word Wrap** property to **true**, if you want the text to be wrapped;
10.7. Set **Borders** of a text component.
10.8. Set the border color.




11. Click the **Preview** button or call **Viewer**, using an **F5** hot key or the **Preview** menu item to see how the report will look like.

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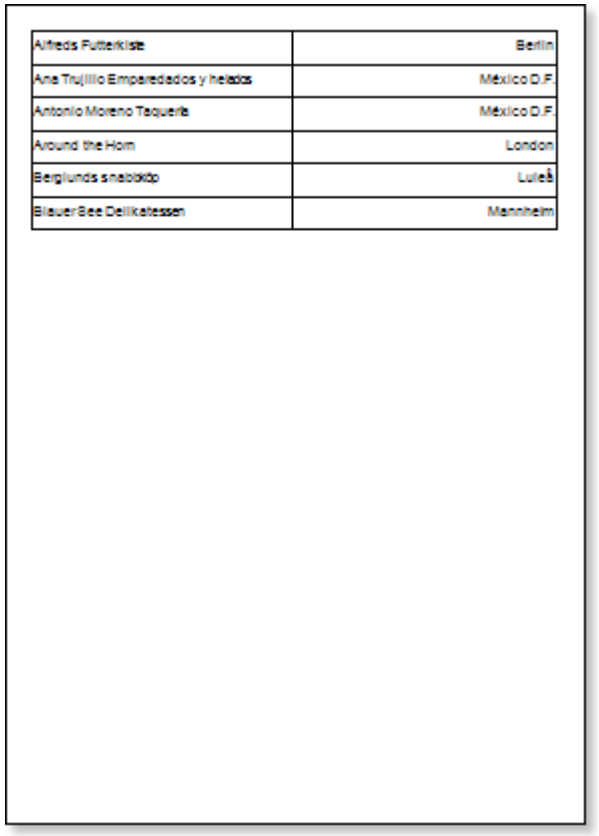
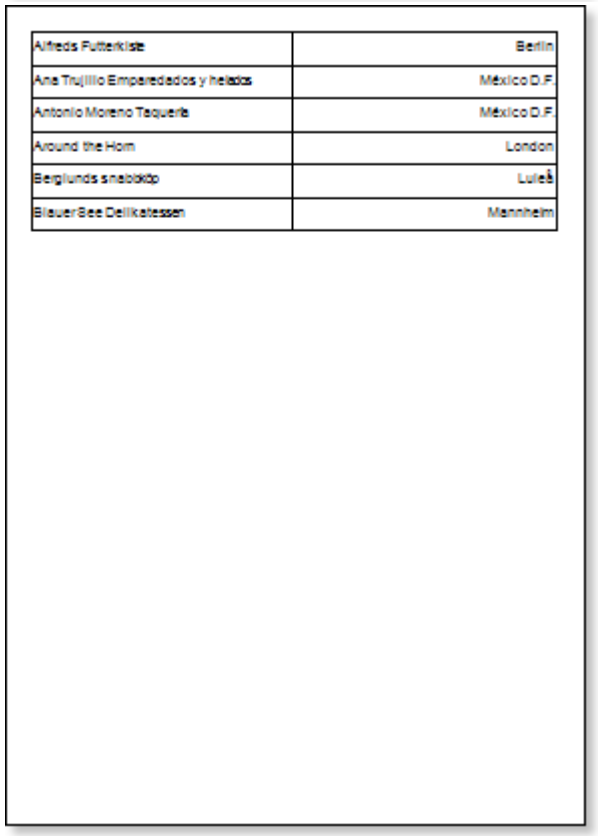


| | |
|---|---|
| Alfreds Futterkiste | Berlin |
| Ana Trujillo Emparedados y helados | México D.F. |
| Antonio Moreno Taquería | México D.F. |
| Around the Horn | London |
| Berglunds snabbköp | Luleå |
| BlauerSee Delikatessen | Mannheim |



| | |
|---|---|
| Alfreds Futterkiste | Berlin |
| Ana Trujillo Emparedados y helados | México D.F. |
| Antonio Moreno Taquería | México D.F. |
| Around the Horn | London |
| Berglunds snabbköp | Luleå |
| BlauerSee Delikatessen | Mannheim |

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As can be seen from the picture above, the report generator rendered the report, which was located in the nested page and placed it on the report page but not in the Sub-Report component.

12. Go back to the report template;
13. If necessary, add some bands to the report template, for example, the **PageHeaderBand**;
14. Edit this band:
    14.1. Align vertically this band;
    14.2. Set values of the properties of the **PageHeaderBand**, if necessary;
    14.3. Set the background color;
    14.4. Set **Borders** of a text component.
    14.5. Set the border color.

15. Put a text component with expression where the expression of the text component in the **PageHeaderBand** will be the page title.
16. Edit the text component:
    16.1. Drag the text component to the required place in the band;
    16.2. Set the text font: size, style, color;
    16.3. Align text component vertically and horizontally;
    16.4. Set the background color of the text component;
    16.5. Align text in the component;
    16.6. Set values of the properties of text components;
    16.7. Set **Borders** of a text component.
    16.8. Set the border color.

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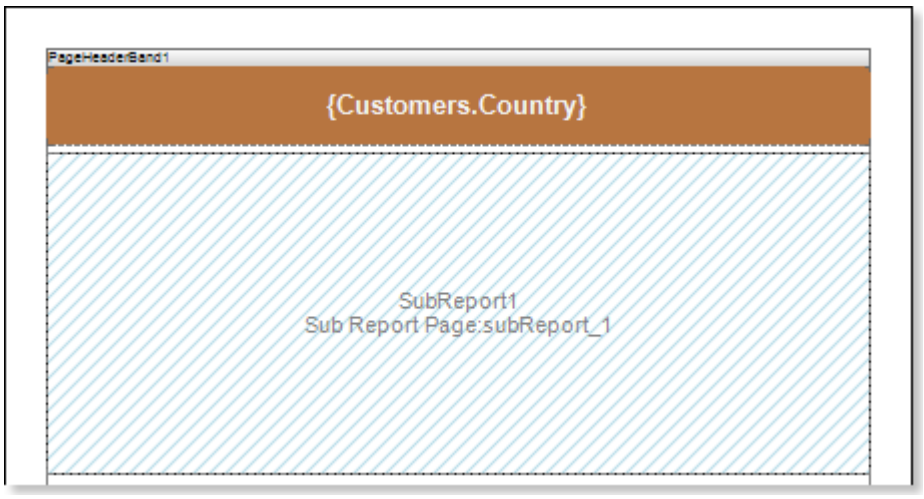
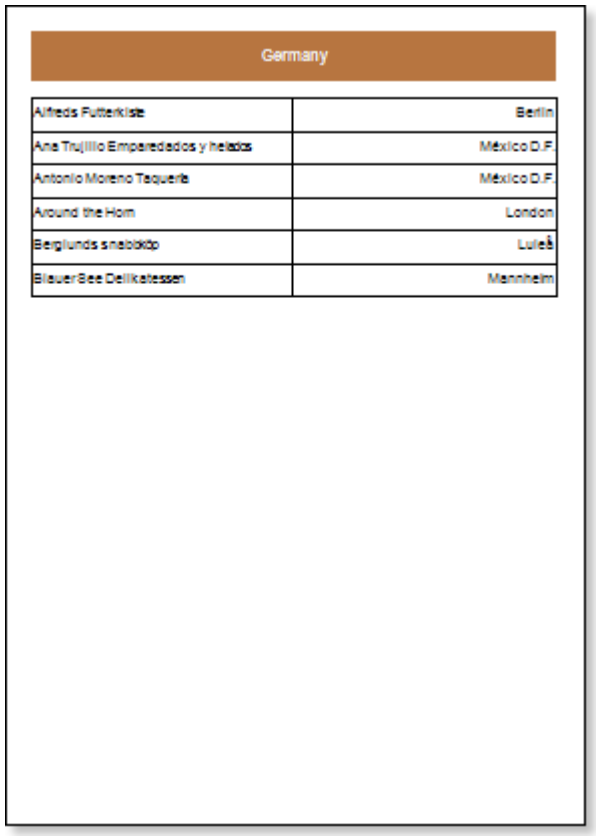
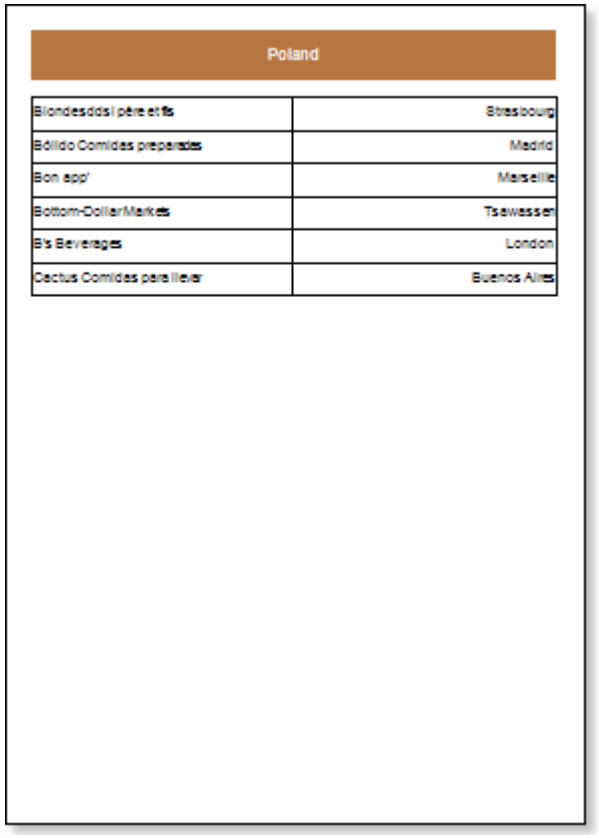



17. Click the **Preview** button or call **Viewer**, using an **F5** hot key or the **Preview** menu item to see how the report will look like.




© 2003-2011 Stimulsoft




## Adding styles

1. Go back to the report template;
2. Select the sub-report;
3. Select the **DataBand**;
4. Change values of **Even style** and **Odd style** properties. If values of these properties are not set, then select the **Edit Styles** in the list of values of these properties and, using **Style Designer**, create a new style. The picture below shows the **Style Designer**

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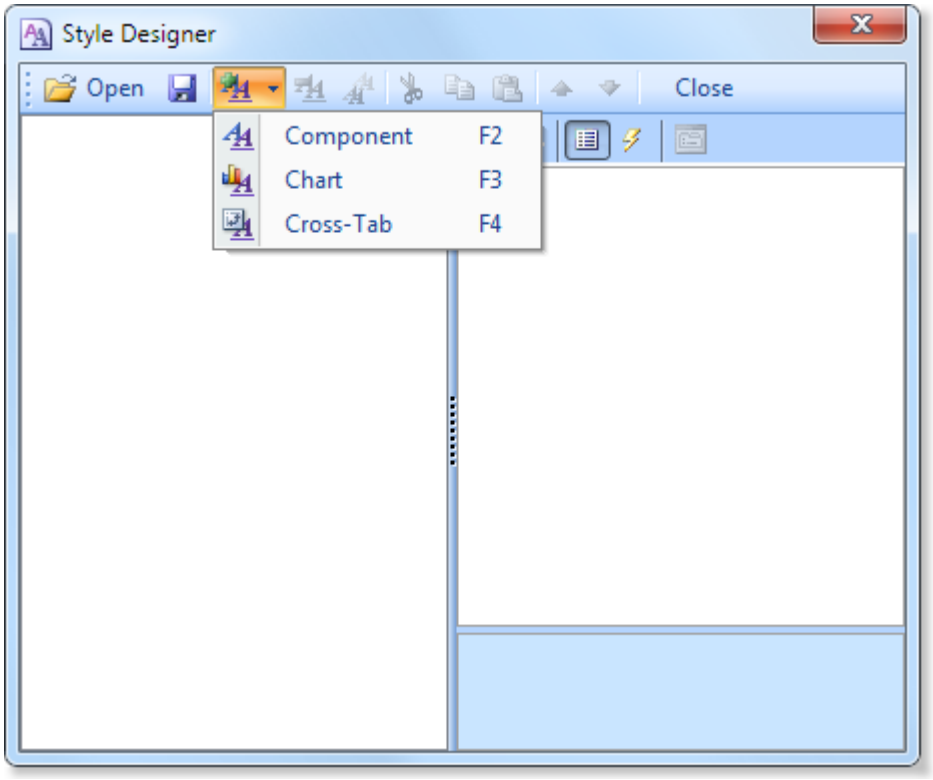


Click the **Add Style** button to start creating a style. Select **Component** from the drop down list. Set the **Brush.Color** property to change the background color of a row. The picture below shows a sample of the **Style Designer** with the list of values of the **Brush.Color** property:

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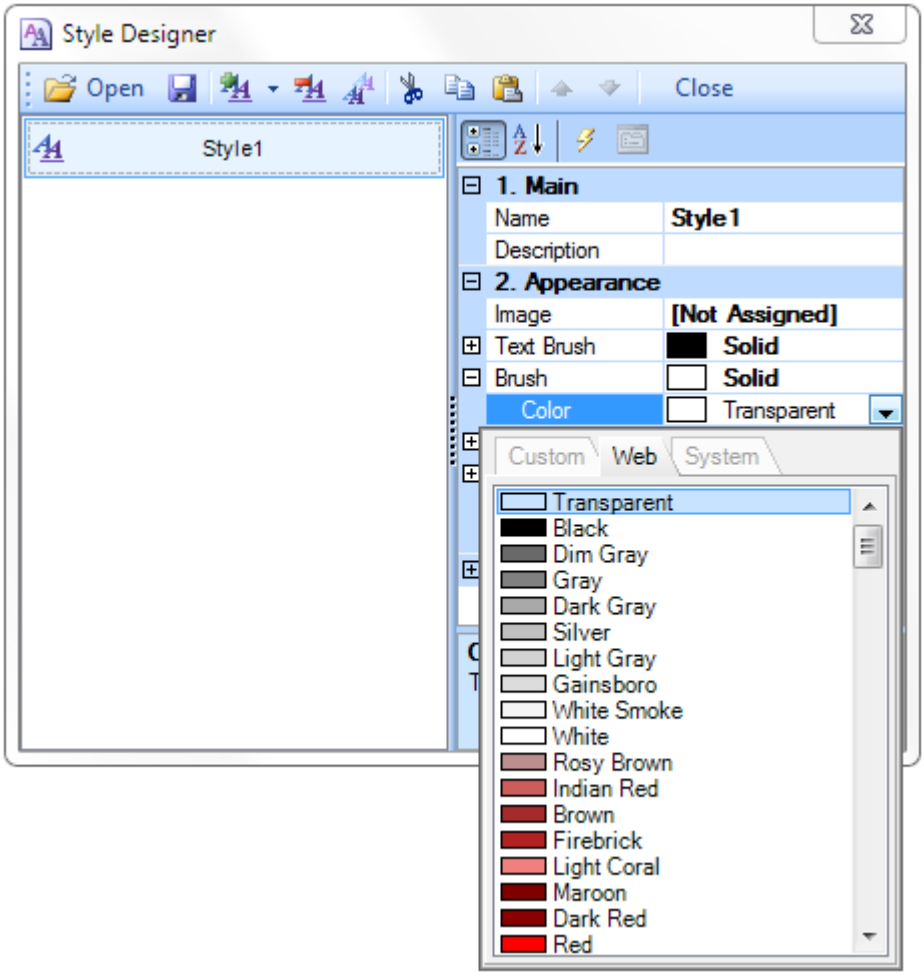


Click **Close**. Then a new value in the list of **Even style** and **Odd style** properties (a style of a list of odd and even rows) will appear.

5. To render the report, click the **Preview** button or invoke the **Viewer**, pressing **F5** or clicking the **Preview** menu item. The picture below shows a sample of a rendered sub-report with alternative color of rows:

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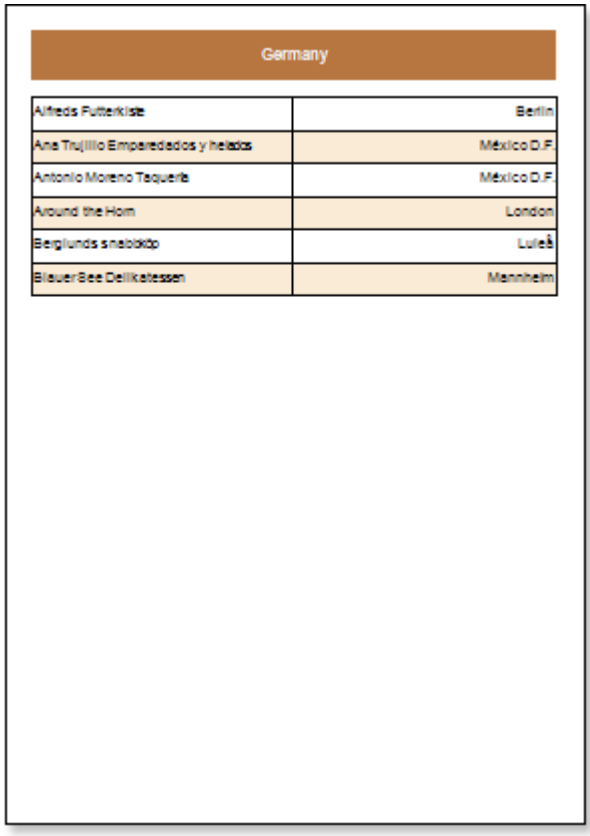
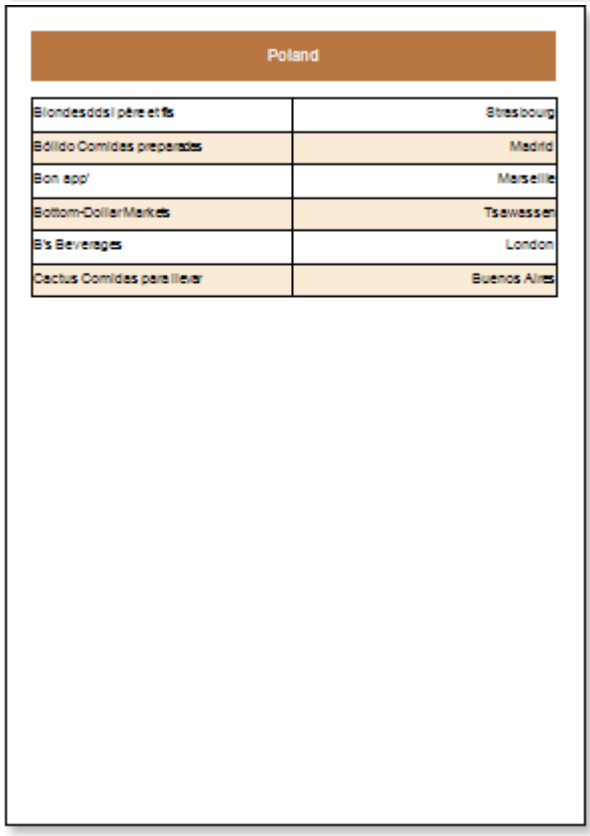


| Germany | |
|---|---|
| Alfreds Futterkiste | Berlin |
| Ana Trujillo Emparedados y helados | México D.F. |
| Antonio Moreno Taquería | México D.F. |
| Around the Horn | London |
| Berglunds snabbköp | Luleå |
| Blauer See Delikatessen | Mannheim |



| Poland | |
|---|---|
| Blondesddsl père et fils | Strasbourg |
| Bólido Comidas preparadas | Madrid |
| Bon app' | Marseille |
| Bottom-Dollar Markets | Tsawassen |
| B's Beverages | London |
| Cactus Comidas para llevar | Buenos Aires |

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## 3.12. Side-by-Side Report

The **Side-by-side** report is a type of independent data lists, located side by side. Do the following steps to create such a report:

1. Run the designer;
2. Connect data:
   2.1. Create **New Connection**;
   2.2. Create **New Data Source**;

3. Add **Sub-Report** components to a report on a page of the report template:

4. Edit **Sub-Report** components:
   4.1. Stretch **Sub-Report** components as seen on the picture below;
   4.2. Change the value of properties of **Sub-Report**. For example, set the **Keep Sub-Report Together** property to **true**, if you want the sub-report to be kept together;
   4.3. Change the background color of the component.

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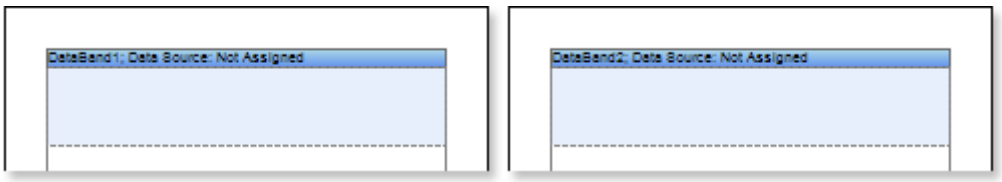
5. Go to the sub-report page;
6. Add two **DataBands** to the sub-report page. Add **DataBand1** to the **Sub Report1** and **DataBand2** to the **Sub Report2**;




7. Edit the **DataBands**:
   7.1. Align the **DataBands** vertically;
   7.2. Change values of properties of the **DataBands**.
   7.3. Change background color of the band;
   7.4. Set **Borders**, if necessary;
   7.5. Change the border color.

8. Specify the data source for the **DataBand** using the **Data Source** property. For example, set the **Customers** data source for the **DataBand1**, and the **Products** data source for the **DataBand2**:

9. Put text components with expressions in the **DataBands**. Where an expression is a reference to a data field. For example, put the following expressions to the **DataBand1**: **{Customers.CompanyName}** and **{Customers.City}**. put the following expressions to the **DataBand2**: **{Products.ProductName}** and **{Products.UnitPrice}**;

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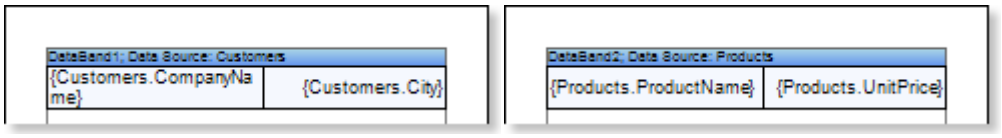
10. Edit **Text** and **TextBoxes**:
    10.1. Drag the text component to the required place in the **DataBand**;
    10.2. Set the text font: size, style, color;
    10.3. Align text component vertically and horizontally;
    10.4. Set the background color of the text component;
    10.5. Align text in the component;
    10.6. Set values of the properties of text components. For example to set the **Word Wrap** property to **true**, if you want the text to be wrapped;
    10.7. Set **Borders** of a text component.
    10.8. Set the border color.




11. Click the **Preview** button or call **Viewer**, using an **F5** hot key or the **Preview** menu item to see how the report will look like:

| | | | |
|---|---|---|---|
| Alfreds Futterkiste | Berlin | Chai | 18 |
| Ana Trujillo Emparedados y helados | México D.F. | Chang | 19 |
| Antonio Moreno Taquería | México D.F. | Aniseed Syrup | 10 |
| Around the Horn | London | Chef Anton's Cajun Seasoning | 22 |
| Berglunds snabbköp | Luleå | Chef Anton's Gumbo Mix | 21,35 |
| Blauer See Delikatessen | Mannheim | Grandma's Boysenberry Spread | 25 |
| Blondesddsl père et fils | Strasbourg | Uncle Bob's Organic Dried Pears | 30 |
| Bólido Comidas preparadas | Madrid | Northwoods Cranberry Sauce | 40 |
| Bon app' | Marseille | Mishi Kobe Niku | 97 |
| Bottom-Dollar Markets | Tsawassen | Ikura | 31 |
| B's Beverages | London | Queso Cabrales | 21 |
| Cactus Comidas para llevar | Buenos Aires | Queso Manchego La Pastora | 38 |
| Centro comercial Moctezuma | México D.F. | Konbu | 6 |
| Chop-suey Chinese | Bern | Tofu | 23,25 |
| Comércio Mineiro | Sao Paulo | Genen Shouyu | 15,5 |

As can be seen from the picture above, the report generator rendered the report, which was located in the nested page and placed it on the report page but not in the Sub-Report component.

12. Go back to the report template;
13. If necessary, add some bands to the report template, for example, the **HeaderBand**;
14. Edit this band:
    14.1. Align vertically this band;
    14.2. Set values of the properties of the **HeaderBand**, if necessary;
    14.3. Set the background color;

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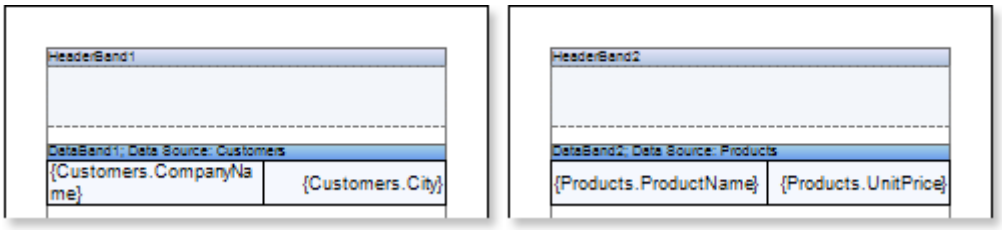
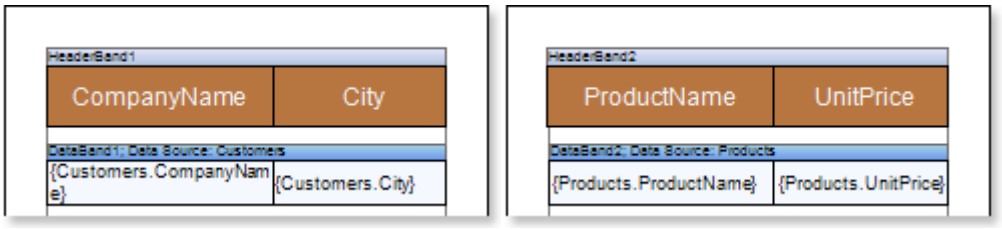
14.4. Set **Borders** of a text component.
14.5. Set the border color.




15. Put a text component with expression where the expression of the text component in the **HeaderBand** will be the page title.
16. Edit the text component:
    16.1. Drag the text component to the required place in the band;
    16.2. Set the text font: size, style, color;
    16.3. Align text component vertically and horizontally;
    16.4. Set the background color of the text component;
    16.5. Align text in the component;
    16.6. Set values of the properties of text components;
    16.7. Set **Borders** of a text component.
    16.8. Set the border color.




17. Click the **Preview** button or call **Viewer**, using an **F5** hot key or the **Preview** menu item to see how the report will look like:

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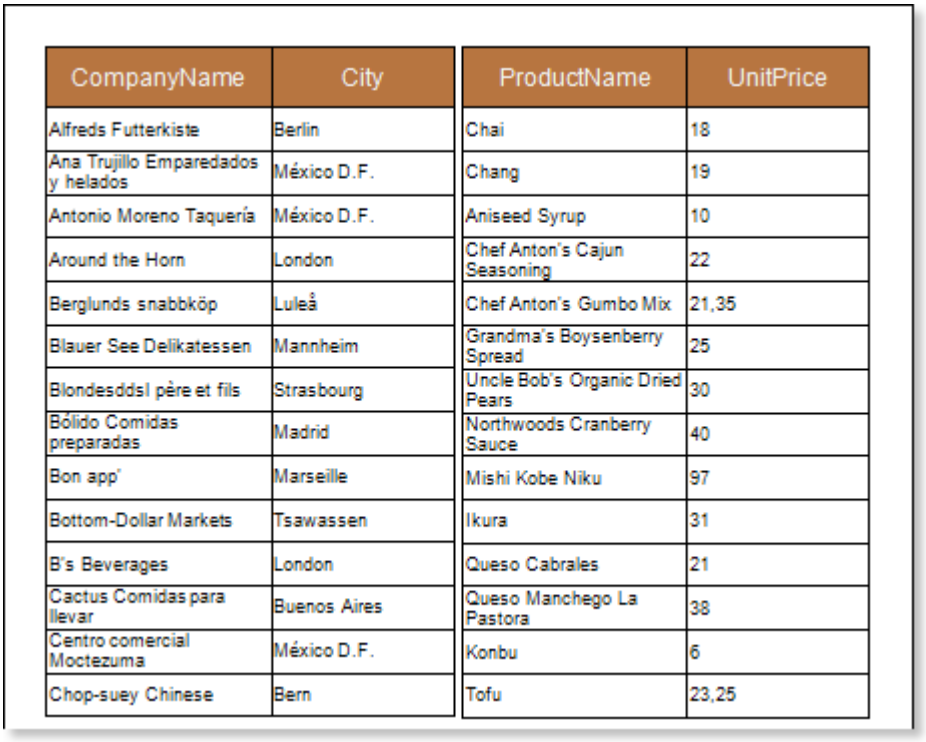

| CompanyName | City | ProductName | UnitPrice |
|---|---|---|---|
| Alfreds Futterkiste | Berlin | Chai | 18 |
| Ana Trujillo Emparedados y helados | México D.F. | Chang | 19 |
| Antonio Moreno Taquería | México D.F. | Aniseed Syrup | 10 |
| Around the Horn | London | Chef Anton's Cajun Seasoning | 22 |
| Berglunds snabbköp | Luleå | Chef Anton's Gumbo Mix | 21,35 |
| Blauer See Delikatessen | Mannheim | Grandma's Boysenberry Spread | 25 |
| Blondesddsl père et fils | Strasbourg | Uncle Bob's Organic Dried Pears | 30 |
| Bólido Comidas preparadas | Madrid | Northwoods Cranberry Sauce | 40 |
| Bon app' | Marseille | Mishi Kobe Niku | 97 |
| Bottom-Dollar Markets | Tsawassen | Ikura | 31 |
| B's Beverages | London | Queso Cabrales | 21 |
| Cactus Comidas para llevar | Buenos Aires | Queso Manchego La Pastora | 38 |
| Centro comercial Moctezuma | México D.F. | Konbu | 6 |
| Chop-suey Chinese | Bern | Tofu | 23,25 |

## Adding styles

1. Go back to the report template;
2. Select the sub-report;
3. Select the **DataBand**;
4. Change values of **Even style** and **Odd style** properties. If values of these properties are not set, then select the **Edit Styles** in the list of values of these properties and, using **Style Designer**, create a new style. The picture below shows the **Style Designer**.

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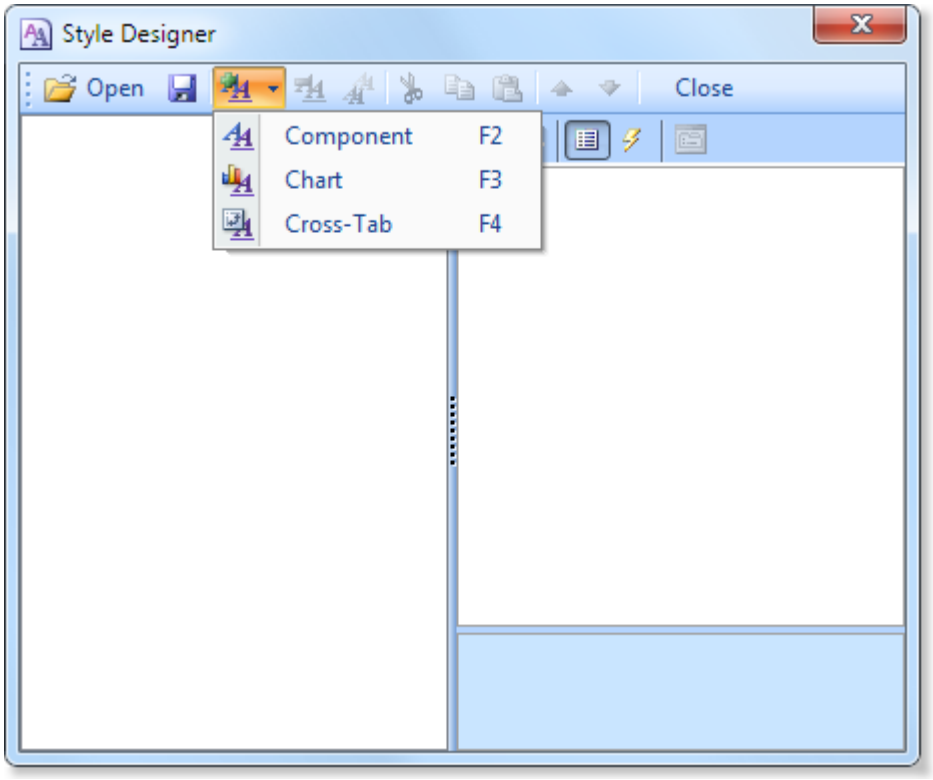


Click the **Add Style** button to start creating a style. Select **Component** from the drop down list. Set the **Brush.Color** property to change the background color of a row. The picture below shows a sample of the **Style Designer** with the list of values of the **Brush.Color** property:

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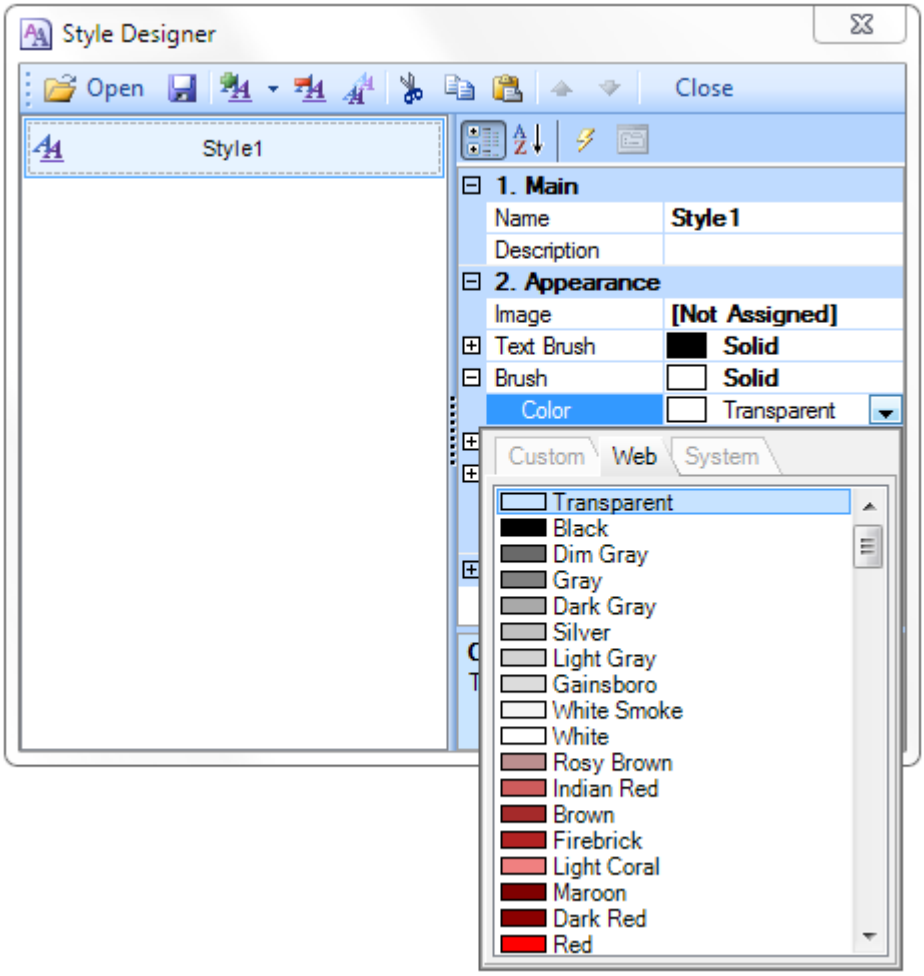


Click **Close**. Then a new value in the list of **Even style** and **Odd style** properties (a style of a list of odd and even rows) will appear.

5. To render the report, click the **Preview** button or invoke the **Viewer**, pressing **F5** or clicking the **Preview** menu item. The picture below shows a sample of a rendered side-by-side report with alternative color of rows:

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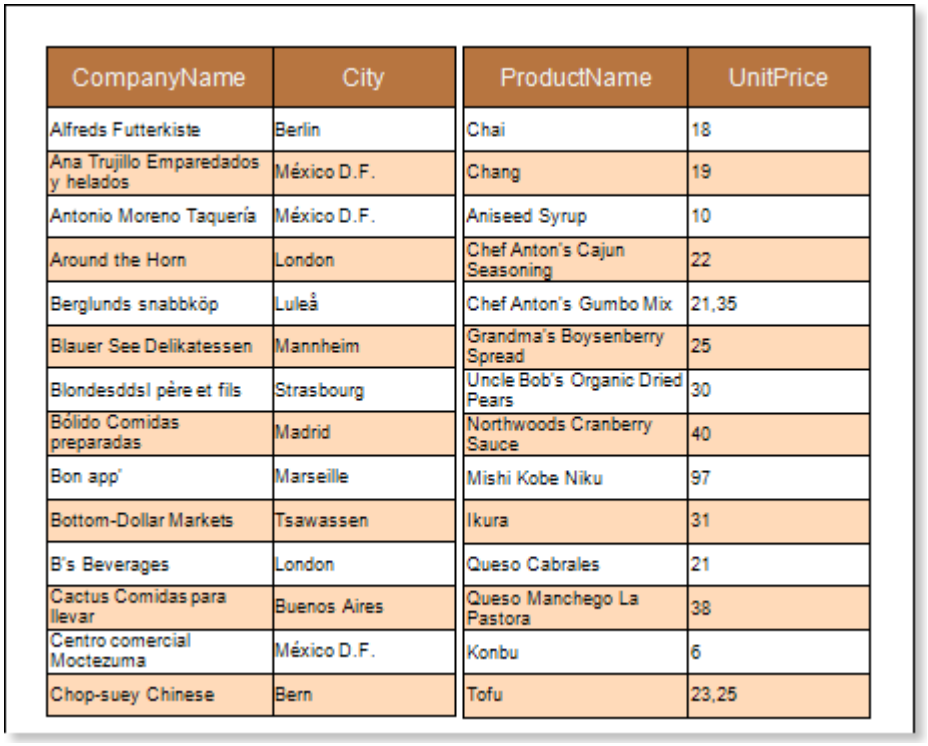

| CompanyName | City | ProductName | UnitPrice |
|---|---|---|---|
| Alfreds Futterkiste | Berlin | Chai | 18 |
| Ana Trujillo Emparedados y helados | México D.F. | Chang | 19 |
| Antonio Moreno Taquería | México D.F. | Aniseed Syrup | 10 |
| Around the Horn | London | Chef Anton's Cajun Seasoning | 22 |
| Berglunds snabbköp | Luleå | Chef Anton's Gumbo Mix | 21,35 |
| Blauer See Delikatessen | Mannheim | Grandma's Boysenberry Spread | 25 |
| Blondesddsl père et fils | Strasbourg | Uncle Bob's Organic Dried Pears | 30 |
| Bólido Comidas preparadas | Madrid | Northwoods Cranberry Sauce | 40 |
| Bon app' | Marseille | Mishi Kobe Niku | 97 |
| Bottom-Dollar Markets | Tsawassen | Ikura | 31 |
| B's Beverages | London | Queso Cabrales | 21 |
| Cactus Comidas para llevar | Buenos Aires | Queso Manchego La Pastora | 38 |
| Centro comercial Moctezuma | México D.F. | Konbu | 6 |
| Chop-suey Chinese | Bern | Tofu | 23,25 |

## 3.13. Report with Sub-reports in DataBand

Do the following steps to create a simple list report:

1. Run the designer;
2. Connect data:
   2.1. Create **New Connection**;
   2.2. Create **New Data Source**;

3. Put the **DataBand** on a page of a report template.

4. Edit **DataBand**:
   4.1. Align the **DataBand** by height;
   4.2. Change values of band properties. For example, set the **Can Break** property to **true**, if you wish the data band to be broken;
   4.3. Change the **DataBand** background color;
   4.4. Enable **Borders** for the **DataBand**, if required;

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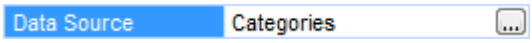
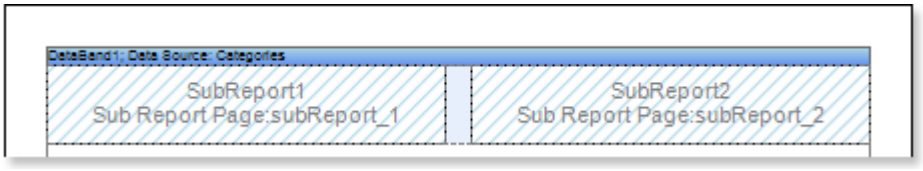
4.5. Change the border color.

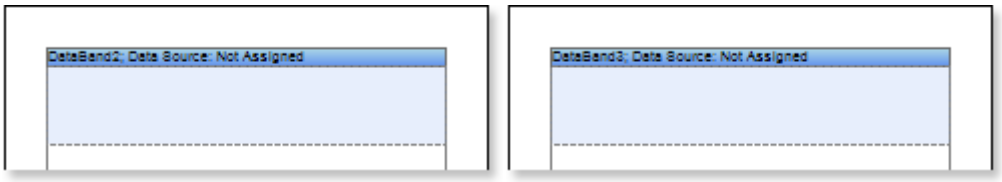
5. Define the data source for the **DataBand** using the **Data Source** property. For example, define the **Categories** data source for the **DataBand**:




6. Put **Sub-Report** components in the **DataBand**;
7. Edit the **Sub-Report** components:
   7.1. Stretch the **Sub-Report** components as seen on the picture below;
   7.2. Change the value of properties of **Sub-Reports**. For example, set the **Keep Sub-Report Together** property to **true**, if you want the sub-report to be kept together;;
   7.3. Change the background color of the components.




8. Go to the sub-report page;
9. Add two **DataBands** to the sub-report page. Add **DataBand1** to the **Sub Report1** and **DataBand2** to the **Sub Report2**;




10. Edit the **DataBands**:
    10.1. Align the **DataBands** vertically;
    10.2. Change values of properties of the **DataBands**.
    10.3. Change background color of the band;
    10.4. Set **Borders**, if necessary;
    10.5. Change the border color.

11. Specify the data source for the **DataBand** using the **Data Source** property. For example, set the **Customers** data source for the **DataBand1**, and the **Products** data source for the **DataBand2**:

12. Put text components with expressions in the **DataBands**. Where an expression is a reference to a data field. For example, put the following expressions to the **DataBand1**: **{Customers.CompanyName}** and **{Customers.City}**. put the following expressions to the **DataBand2**: **{Products.ProductName}** and **{Products.UnitPrice}**;

13. Edit **Text** and **TextBoxes**:
    13.1. Drag the text component to the required place in the **DataBand**;

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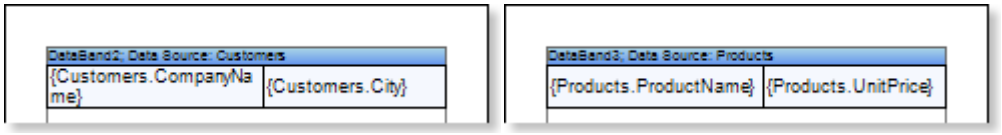
13.2. Set the text font: size, style, color;
13.3. Align text component vertically and horizontally;
13.4. Set the background color of the text component;
13.5. Align text in the component;
13.6. Set values of the properties of text components. For example to set the **Word Wrap** property to **true**, if you want the text to be wrapped;
13.7. Set **Borders** of a text component.
13.8. Set the border color.




14. Click the **Preview** button or call **Viewer**, using an **F5** hot key or the **Preview** menu item to see how the report will look like:

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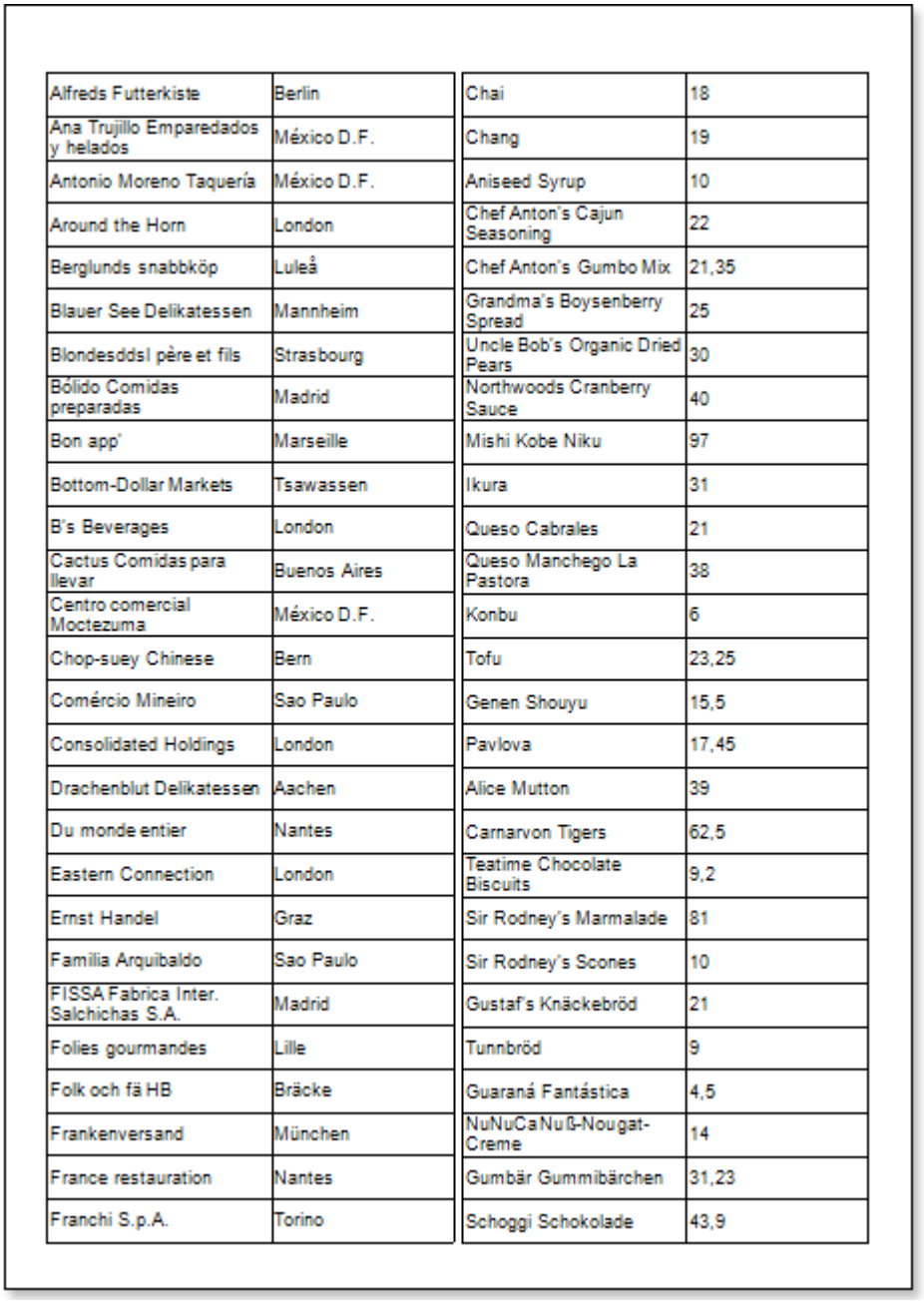

| | | | |
|---|---|---|---|
| Alfreds Futterkiste | Berlin | Chai | 18 |
| Ana Trujillo Emparedados y helados | México D.F. | Chang | 19 |
| Antonio Moreno Taquería | México D.F. | Aniseed Syrup | 10 |
| Around the Horn | London | Chef Anton's Cajun Seasoning | 22 |
| Berglunds snabbköp | Luleå | Chef Anton's Gumbo Mix | 21,35 |
| Blauer See Delikatessen | Mannheim | Grandma's Boysenberry Spread | 25 |
| Blondesddsl père et fils | Strasbourg | Uncle Bob's Organic Dried Pears | 30 |
| Bólido Comidas preparadas | Madrid | Northwoods Cranberry Sauce | 40 |
| Bon app' | Marseille | Mishi Kobe Niku | 97 |
| Bottom-Dollar Markets | Tsawassen | Ikura | 31 |
| B's Beverages | London | Queso Cabrales | 21 |
| Cactus Comidas para llevar | Buenos Aires | Queso Manchego La Pastora | 38 |
| Centro comercial Moctezuma | México D.F. | Konbu | 6 |
| Chop-suey Chinese | Bern | Tofu | 23,25 |
| Comércio Mineiro | Sao Paulo | Genen Shouyu | 15,5 |
| Consolidated Holdings | London | Pavlova | 17,45 |
| Drachenblut Delikatessen | Aachen | Alice Mutton | 39 |
| Du monde entier | Nantes | Carnarvon Tigers | 62,5 |
| Eastern Connection | London | Teatime Chocolate Biscuits | 9,2 |
| Ernst Handel | Graz | Sir Rodney's Marmalade | 81 |
| Familia Arquibaldo | Sao Paulo | Sir Rodney's Scones | 10 |
| FISSA Fabrica Inter. Salchichas S.A. | Madrid | Gustaf's Knäckebröd | 21 |
| Folies gourmandes | Lille | Tunnbröd | 9 |
| Folk och fä HB | Bräcke | Guaraná Fantástica | 4,5 |
| Frankenversand | München | NuNuCa Nuß-Nougat-Creme | 14 |
| France restauration | Nantes | Gumbär Gummibärchen | 31,23 |
| Franchi S.p.A. | Torino | Schoggi Schokolade | 43,9 |

15. Go back to the report template;
16. If necessary, add some bands to the report template, for example, the **HeaderBand**;
17. Edit this band:
    17.1. Align vertically this band;
    17.2. Set values of the properties of the **HeaderBand**, if necessary;
    17.3. Set the background color;
    17.4. Set **Borders** of a text component.
    17.5. Set the border color.

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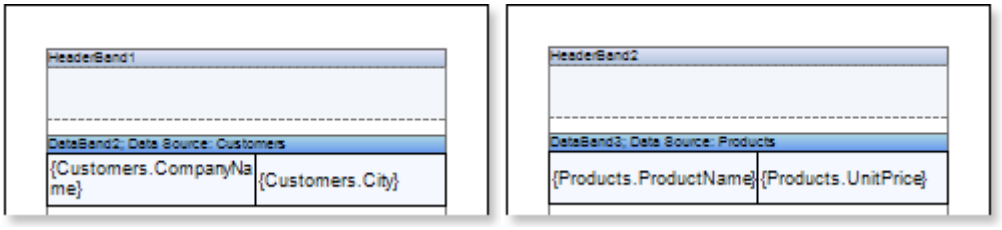


18. Put a text component with expression where the expression of the text component in the **HeaderBand** will be the page title.
19. Edit the text component:
    19.1. Drag the text component to the required place in the band;
    19.2. Set the text font: size, style, color;
    19.3. Align text component vertically and horizontally;
    19.4. Set the background color of the text component;
    19.5. Align text in the component;
    19.6. Set values of the properties of text components;
    19.7. Set **Borders** of a text component.
    19.8. Set the border color.

20. Click the **Preview** button or call **Viewer**, using an **F5** hot key or the **Preview** menu item to see how the report will look like:

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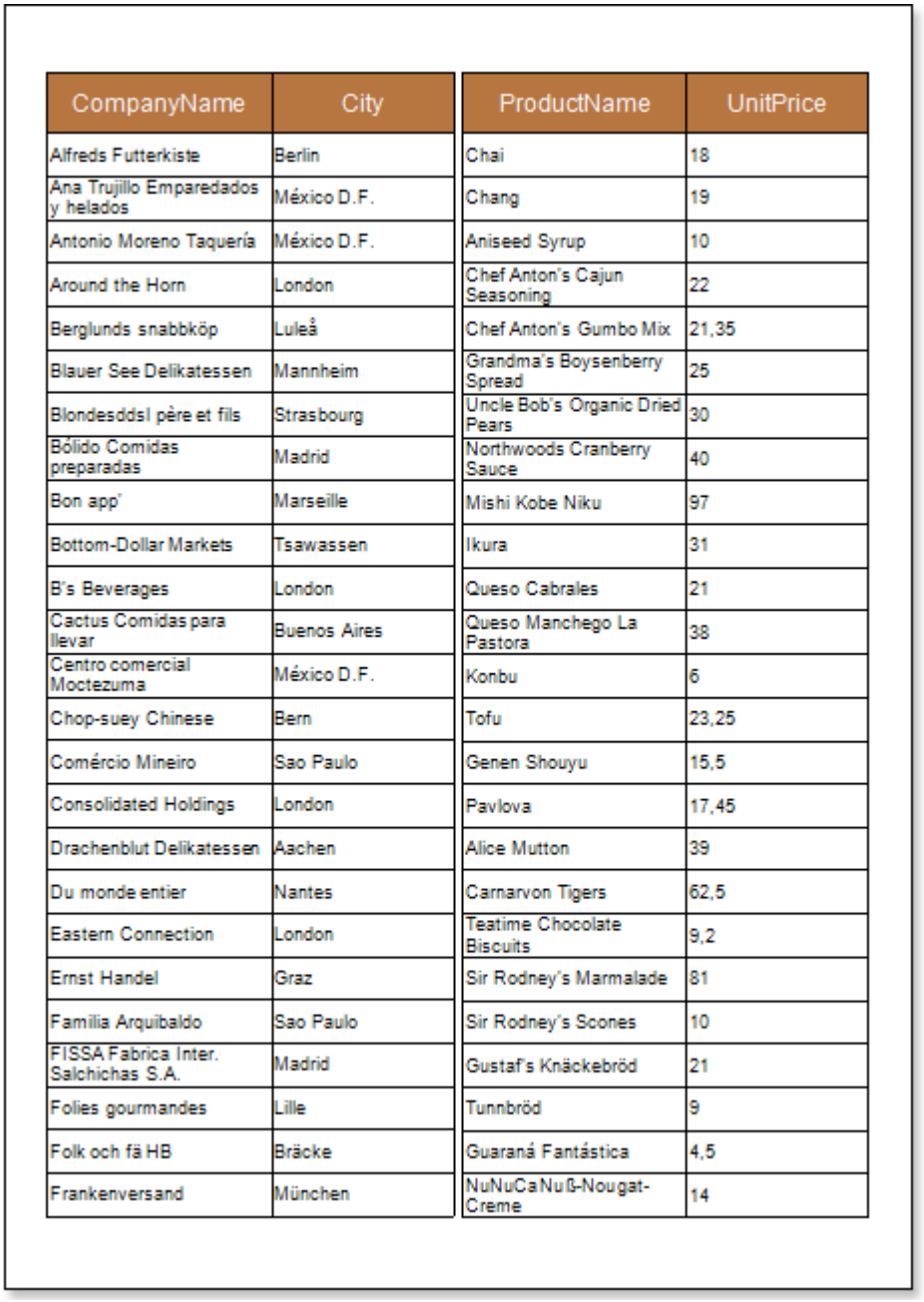

| CompanyName | City | ProductName | UnitPrice |
|---|---|---|---|
| Alfreds Futterkiste | Berlin | Chai | 18 |
| Ana Trujillo Emparedados y helados | México D.F. | Chang | 19 |
| Antonio Moreno Taquería | México D.F. | Aniseed Syrup | 10 |
| Around the Horn | London | Chef Anton's Cajun Seasoning | 22 |
| Berglunds snabbköp | Luleå | Chef Anton's Gumbo Mix | 21,35 |
| Blauer See Delikatessen | Mannheim | Grandma's Boysenberry Spread | 25 |
| Blondesddsl père et fils | Strasbourg | Uncle Bob's Organic Dried Pears | 30 |
| Bólido Comidas preparadas | Madrid | Northwoods Cranberry Sauce | 40 |
| Bon app' | Marseille | Mishi Kobe Niku | 97 |
| Bottom-Dollar Markets | Tsawassen | Ikura | 31 |
| B's Beverages | London | Queso Cabrales | 21 |
| Cactus Comidas para llevar | Buenos Aires | Queso Manchego La Pastora | 38 |
| Centro comercial Moctezuma | México D.F. | Konbu | 6 |
| Chop-suey Chinese | Bern | Tofu | 23,25 |
| Comércio Mineiro | Sao Paulo | Genen Shouyu | 15,5 |
| Consolidated Holdings | London | Pavlova | 17,45 |
| Drachenblut Delikatessen | Aachen | Alice Mutton | 39 |
| Du monde entier | Nantes | Carnarvon Tigers | 62,5 |
| Eastern Connection | London | Teatime Chocolate Biscuits | 9,2 |
| Ernst Handel | Graz | Sir Rodney's Marmalade | 81 |
| Familia Arquibaldo | Sao Paulo | Sir Rodney's Scones | 10 |
| FISSA Fabrica Inter. Salchichas S.A. | Madrid | Gustaf's Knäckebröd | 21 |
| Folies gourmandes | Lille | Tunnbröd | 9 |
| Folk och fä HB | Bräcke | Guaraná Fantástica | 4,5 |
| Frankenversand | München | NuNuCa Nuß-Nougat-Creme | 14 |

## Adding styles

1. Go back to the report template;
2. Select the sub-report;
3. Select the **DataBand**;
4. Change values of **Even style** and **Odd style** properties. If values of these properties are not set, then select the **Edit Styles** in the list of values of these properties and, using **Style Designer**, create a new style. The picture below shows the **Style Designer**.

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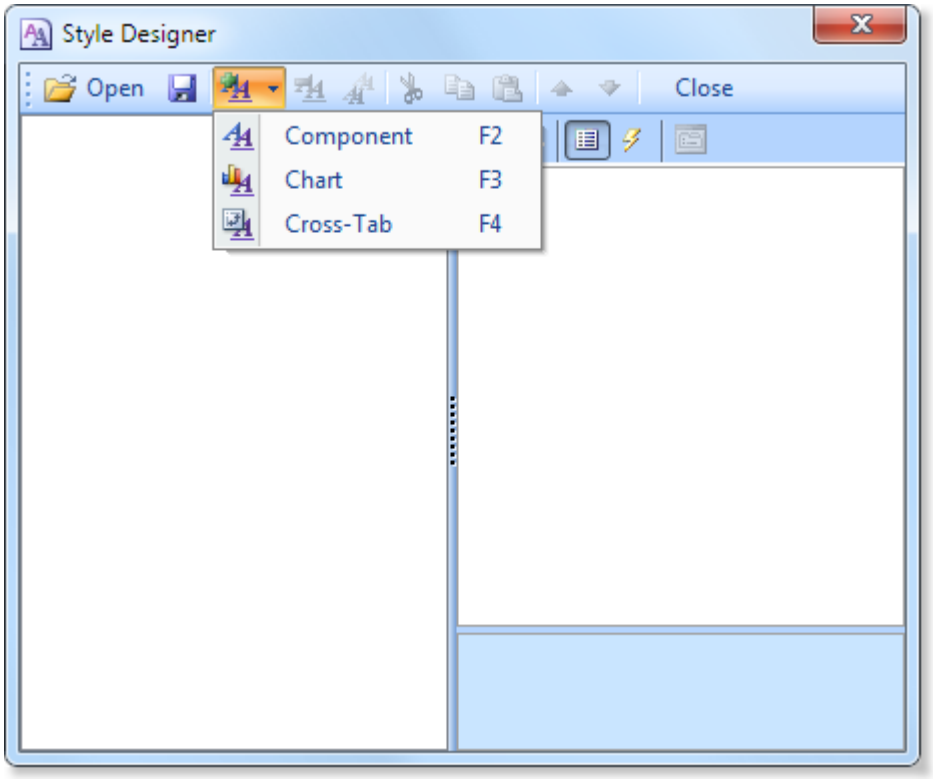


Click the **Add Style** button to start creating a style. Select **Component** from the drop down list. Set the **Brush.Color** property to change the background color of a row. The picture below shows a sample of the **Style Designer** with the list of values of the **Brush.Color** property:

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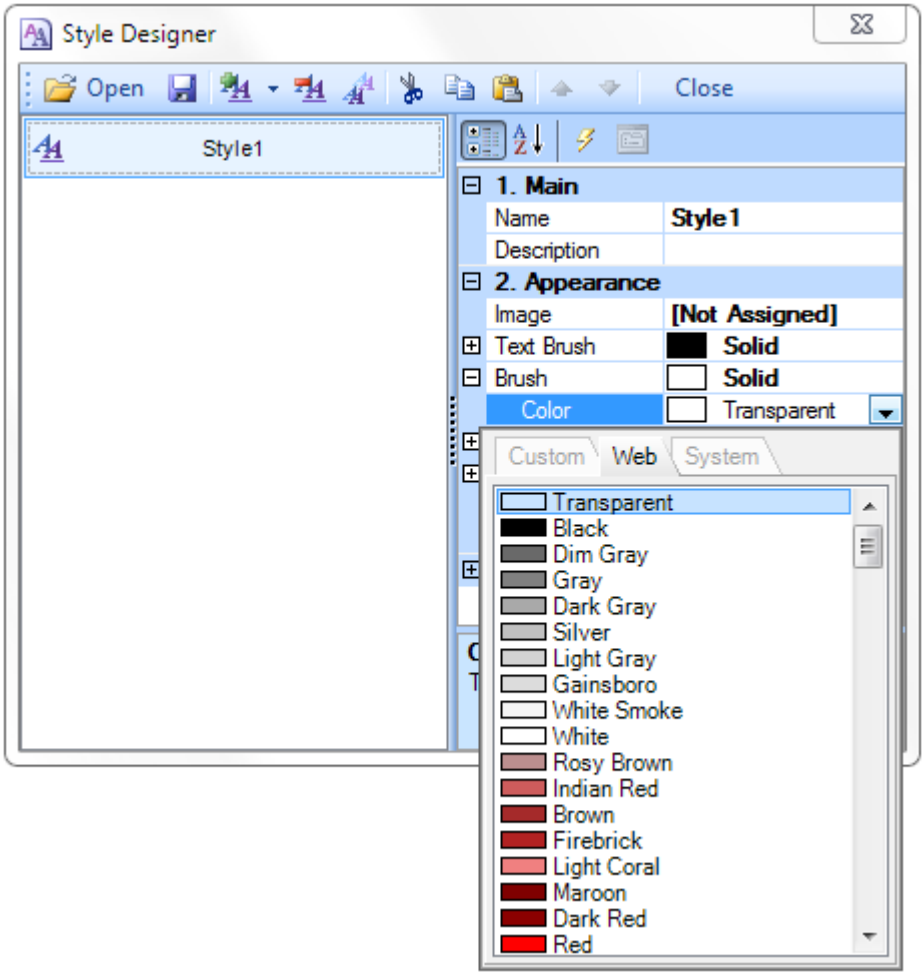


Click **Close**. Then a new value in the list of **Even style** and **Odd style** properties (a style of a list of odd and even rows) will appear.

5. To render the report, click the **Preview** button or invoke the **Viewer**, pressing **F5** or clicking the **Preview** menu item. The picture below shows a sample of a rendered report with sub-report and alternative color of rows:

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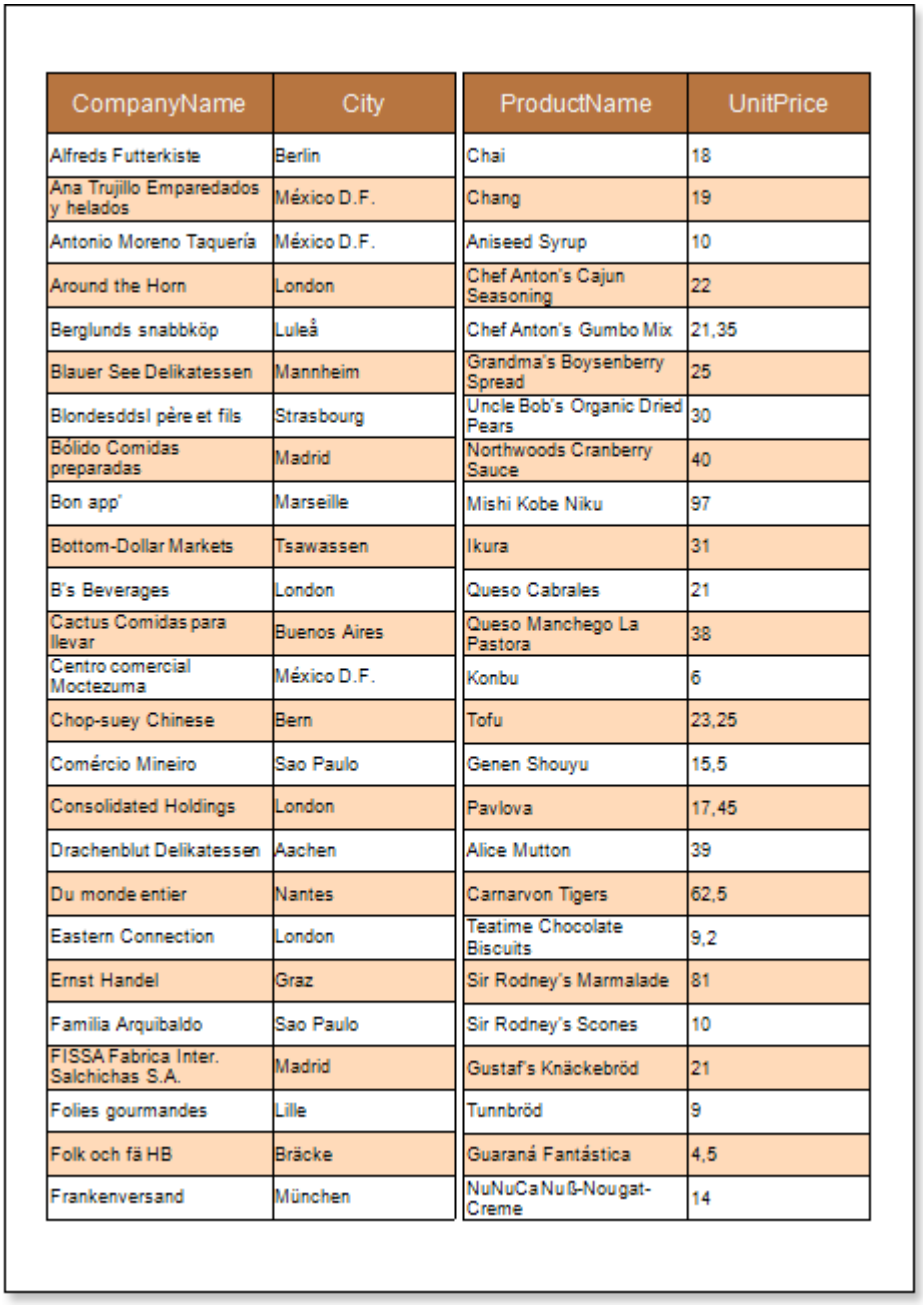

| CompanyName | City | ProductName | UnitPrice |
|---|---|---|---|
| Alfreds Futterkiste | Berlin | Chai | 18 |
| Ana Trujillo Emparedados y helados | México D.F. | Chang | 19 |
| Antonio Moreno Taquería | México D.F. | Aniseed Syrup | 10 |
| Around the Horn | London | Chef Anton's Cajun Seasoning | 22 |
| Berglunds snabbköp | Luleå | Chef Anton's Gumbo Mix | 21,35 |
| Blauer See Delikatessen | Mannheim | Grandma's Boysenberry Spread | 25 |
| Blondesddsl père et fils | Strasbourg | Uncle Bob's Organic Dried Pears | 30 |
| Bólido Comidas preparadas | Madrid | Northwoods Cranberry Sauce | 40 |
| Bon app' | Marseille | Mishi Kobe Niku | 97 |
| Bottom-Dollar Markets | Tsawassen | Ikura | 31 |
| B's Beverages | London | Queso Cabrales | 21 |
| Cactus Comidas para llevar | Buenos Aires | Queso Manchego La Pastora | 38 |
| Centro comercial Moctezuma | México D.F. | Konbu | 6 |
| Chop-suey Chinese | Bern | Tofu | 23,25 |
| Comércio Mineiro | Sao Paulo | Genen Shouyu | 15,5 |
| Consolidated Holdings | London | Pavlova | 17,45 |
| Drachenblut Delikatessen | Aachen | Alice Mutton | 39 |
| Du monde entier | Nantes | Carnarvon Tigers | 62,5 |
| Eastern Connection | London | Teatime Chocolate Biscuits | 9,2 |
| Ernst Handel | Graz | Sir Rodney's Marmalade | 81 |
| Familia Arquibaldo | Sao Paulo | Sir Rodney's Scones | 10 |
| FISSA Fabrica Inter. Salchichas S.A. | Madrid | Gustaf's Knäckebröd | 21 |
| Folies gourmandes | Lille | Tunnbröd | 9 |
| Folk och fä HB | Bräcke | Guaraná Fantástica | 4,5 |
| Frankenversand | München | NuNuCa Nuß-Nougat-Creme | 14 |

## 3.14. Master-Detail Report and Sub-Reports

Do the following steps to create a **Master-Detail** report with sub-reports:

1. Run the designer;
2. Connect data:
    2.1. Create **New Connection**;

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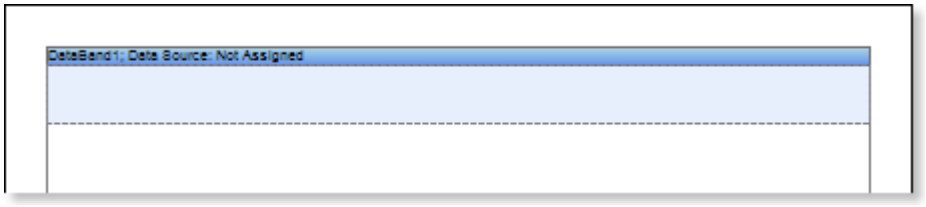
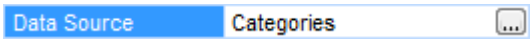
2.2. Create **New Data Source**;

3. Create **Relation** between data sources. If the relation will not be created and/or the **Relation** property of the **Detail** data source will not be filled, then, for **Master** entry, all **Detail** entries will be output;
4. Put the **DataBand1** on a page of a report template:




5. Edit **DataBand1**:
   5.1. Align the **DataBand1** by height;
   5.2. Change values of band properties. For example, set the **Can Break** property to **true**, if you wish the data band to be broken;
   5.3. Change the **DataBand1** background color;
   5.4. Enable **Borders** for the **DataBand1**, if required;
   5.5. Change the border color.

6. Define the data source for the **DataBand1** using the **Data Source** property. For example, define the **Categories** data source for the **DataBand2:**




7. Put text components with expressions in the **DataBand1**. Where an expression is a reference to a data field. For example, put the text component with the following expression in the **DataBand1** ( **Master** component): **{Categories.CategoryName}**;

8. Edit **Text** and **TextBoxes**:
   8.1. Drag the text component to the required place in the **DataBand1**;
   8.2. Set the text font: size, style, color;
   8.3. Align text component vertically and horizontally;
   8.4. Set the background color of the text component;
   8.5. Align text in the component;
   8.6. Set values of the properties of text components. For example to set the **Word Wrap** property to **true**, if you want the text to be wrapped;
   8.7. Set **Borders** of a text component.
   8.8. Set the border color.

9. Put a **Sub-Report** component in the **DataBand1**;

10. Edit the **Sub-Report** components:
    10.1. Stretch the **Sub-Report** components as seen on the picture below;
    10.2. Change the value of properties of **Sub-Reports**. For example, set the **Keep Sub-Report Together** property to **true**, if you want the sub-report to be kept together;;
    10.3. Change the background color of the components.

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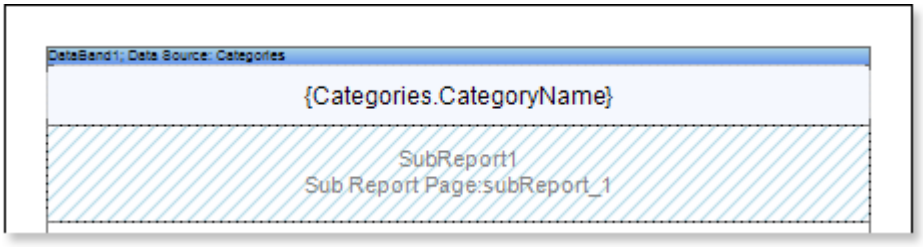
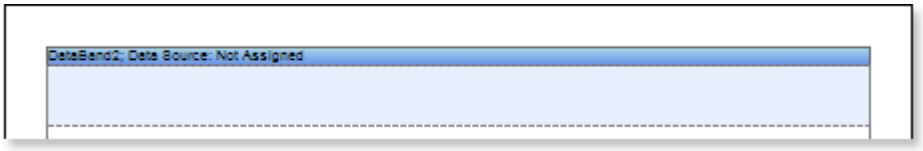
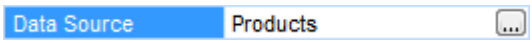



11. Go to the sub-report page;
12. Add to the **DataBand2** to the sub-report page.




13. Edit **DataBand2**:
    13.1. Align the **DataBand2** by height;
    13.2. Change values of band properties. For example, set the **Can Break** property to **true**, if you wish the data band to be broken;
    13.3. Change the **DataBand2** background color;
    13.4. Enable **Borders** for the **DataBand2**, if required;
    13.5. Change the border color.

14. Define the data source for the **DataBand1** using the **Data Source** property. For example, define the **Products** data source for the **DataBand2**:




15. Define the **Master** component in a report. In our case set the **DataBand1** as a **Master** component for the **DataBand2**;
16. Fill the **Data Relation** property of the **DataBand**, that is the **Detail** component, i.e. in this case for the **DataBand2**;
17. Put text components with expressions in the **DataBand1**. Where an expression is a reference to a data field. For example, put the text component with the following expression in the **DataBand2** : **{Products.ProductName}** and **{Products.UnitPrice}**;
18. Edit **Text** and **TextBoxes**:
    18.1. Drag the text component to the required place in the **DataBand2**;
    18.2. Set the text font: size, style, color;
    18.3. Align text component vertically and horizontally;
    18.4. Set the background color of the text component;
    18.5. Align text in the component;
    18.6. Set values of the properties of text components. For example to set the **Word Wrap** property to **true**, if you want the text to be wrapped;
    18.7. Set **Borders** of a text component.
    18.8. Set the border color.

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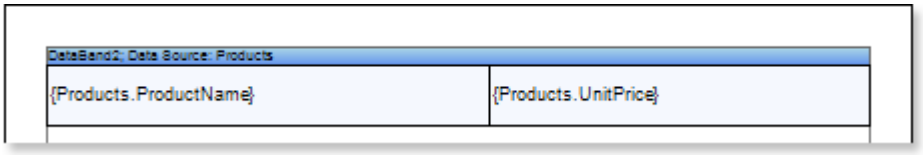
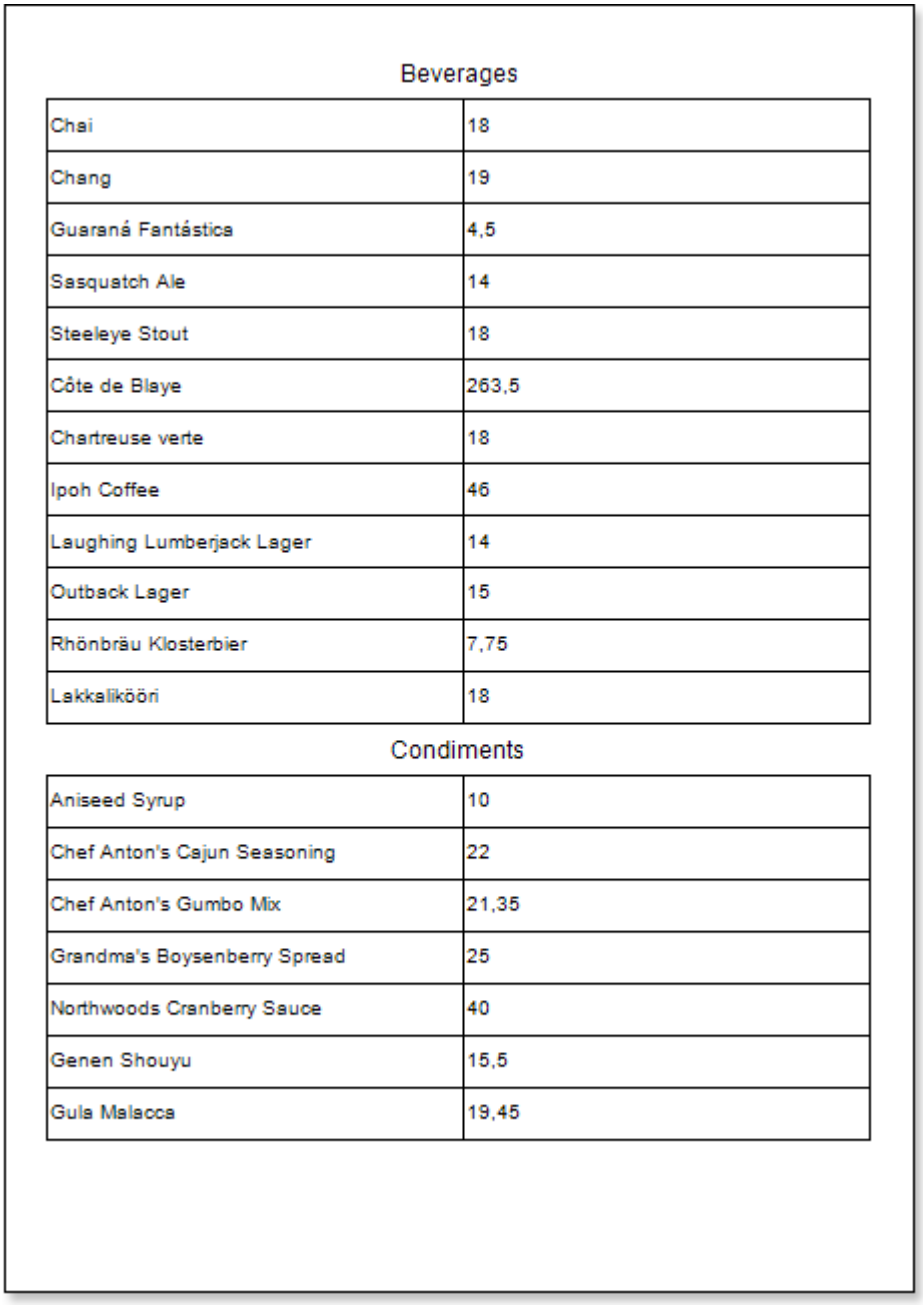



19. Click the **Preview** button or call **Viewer**, using an **F5** hot key or the **Preview** menu item to see how the report will look like:



Beverages

| | |
|---|---|
| Chai | 18 |
| Chang | 19 |
| Guaraná Fantástica | 4,5 |
| Sasquatch Ale | 14 |
| Steeleye Stout | 18 |
| Côte de Blaye | 263,5 |
| Chartreuse verte | 18 |
| Ipoh Coffee | 46 |
| Laughing Lumberjack Lager | 14 |
| Outback Lager | 15 |
| Rhönbräu Klosterbier | 7,75 |
| Lakkalikööri | 18 |

Condiments

| | |
|---|---|
| Aniseed Syrup | 10 |
| Chef Anton's Cajun Seasoning | 22 |
| Chef Anton's Gumbo Mix | 21,35 |
| Grandma's Boysenberry Spread | 25 |
| Northwoods Cranberry Sauce | 40 |
| Genen Shouyu | 15,5 |
| Gula Malacca | 19,45 |

20. Go back to the report template;
21. If necessary, add some bands to the report template, for example, the **HeaderBand**;

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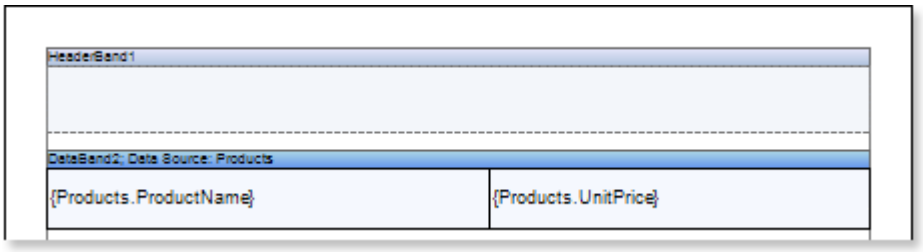
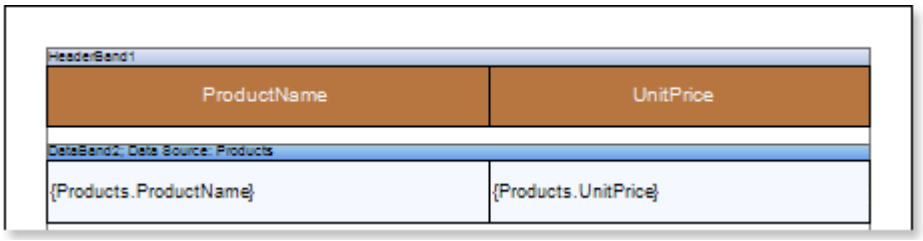
22. Edit this band:
    22.1. Align vertically this band;
    22.2. Set values of the properties of the **HeaderBand**, if necessary;
    22.3. Set the background color;
    22.4. Set **Borders** of a text component.
    22.5. Set the border color.




23. Put a text component with expression where the expression of the text component in the **HeaderBand** will be the page title.
24. Edit the text component:
    24.1. Drag the text component to the required place in the band;
    24.2. Set the text font: size, style, color;
    24.3. Align text component vertically and horizontally;
    24.4. Set the background color of the text component;
    24.5. Align text in the component;
    24.6. Set values of the properties of text components;
    24.7. Set **Borders** of a text component.
    24.8. Set the border color.




25. Click the **Preview** button or call **Viewer**, using an **F5** hot key or the **Preview** menu item to see how the report will look like:

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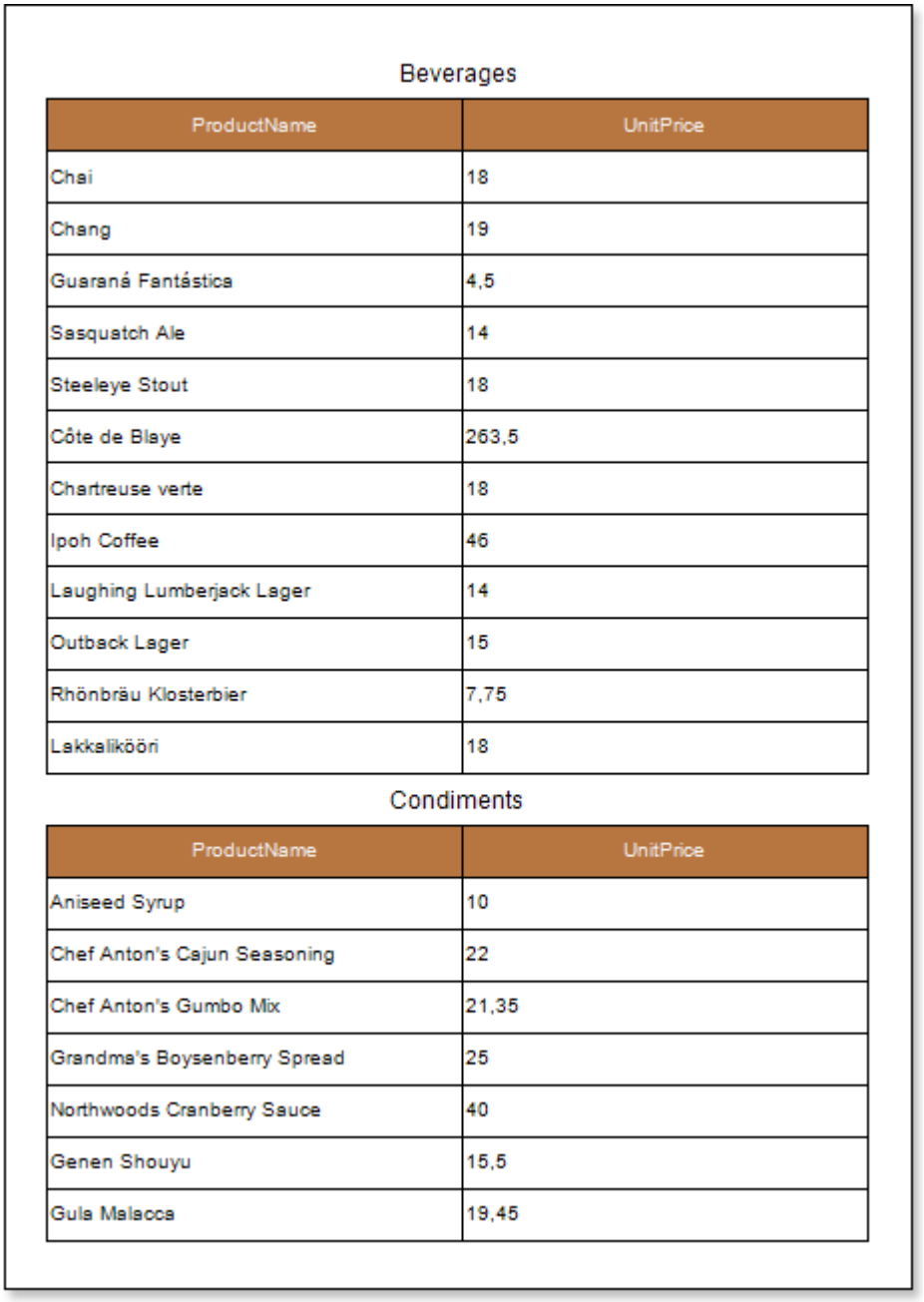

Beverages

| ProductName | UnitPrice |
|---|---|
| Chai | 18 |
| Chang | 19 |
| Guaraná Fantástica | 4,5 |
| Sasquatch Ale | 14 |
| Steeleye Stout | 18 |
| Côte de Blaye | 263,5 |
| Chartreuse verte | 18 |
| Ipoh Coffee | 46 |
| Laughing Lumberjack Lager | 14 |
| Outback Lager | 15 |
| Rhönbräu Klosterbier | 7,75 |
| Lakkalikööri | 18 |

Condiments

| ProductName | UnitPrice |
|---|---|
| Aniseed Syrup | 10 |
| Chef Anton's Cajun Seasoning | 22 |
| Chef Anton's Gumbo Mix | 21,35 |
| Grandma's Boysenberry Spread | 25 |
| Northwoods Cranberry Sauce | 40 |
| Genen Shouyu | 15,5 |
| Gula Malacca | 19,45 |

## Adding styles

1. Go back to the report template;
2. Select the sub-report;
3. Select the **DataBand**;
4. Change values of **Even style** and **Odd style** properties. If values of these properties are not set, then select the **Edit Styles** in the list of values of these properties and, using **Style Designer**, create a new style. The picture below shows the **Style Designer**.

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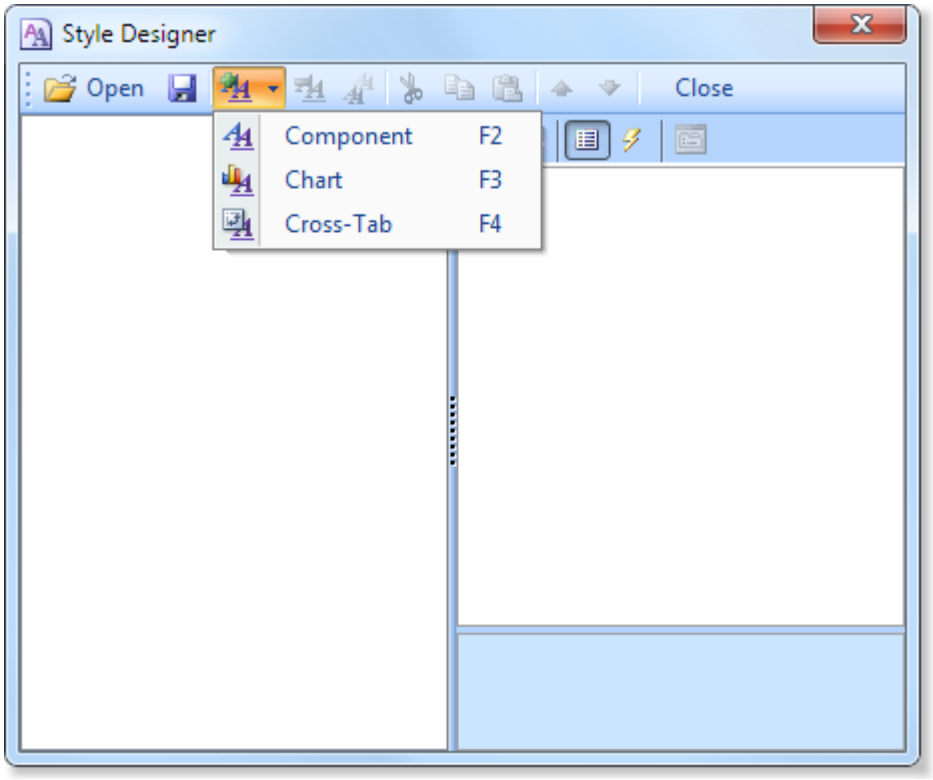


Click the **Add Style** button to start creating a style. Select **Component** from the drop down list. Set the **Brush.Color** property to change the background color of a row. The picture below shows a sample of the **Style Designer** with the list of values of the **Brush.Color** property:

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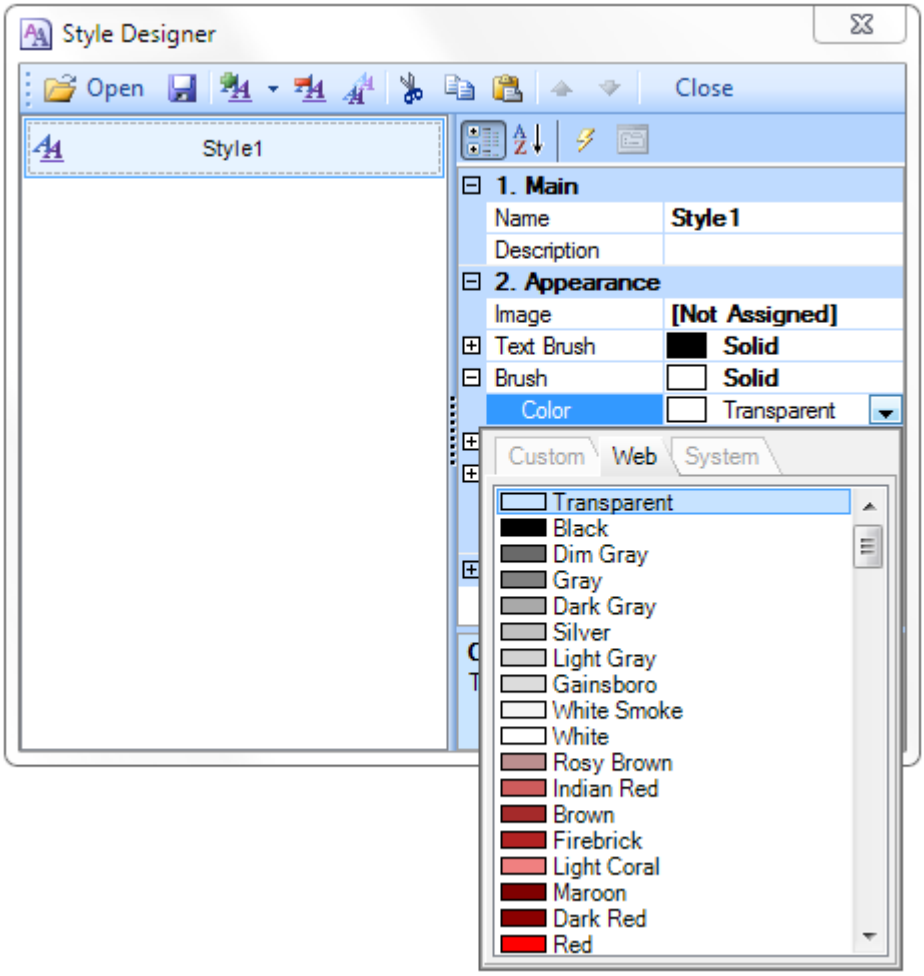


Click **Close**. Then a new value in the list of **Even style** and **Odd style** properties (a style of a list of odd and even rows) will appear.

5. To render the report, click the **Preview** button or invoke the **Viewer**, pressing **F5** or clicking the **Preview** menu item. The picture below shows a sample of a rendered "**master-detail report with sub-report**" with alternative color of rows:

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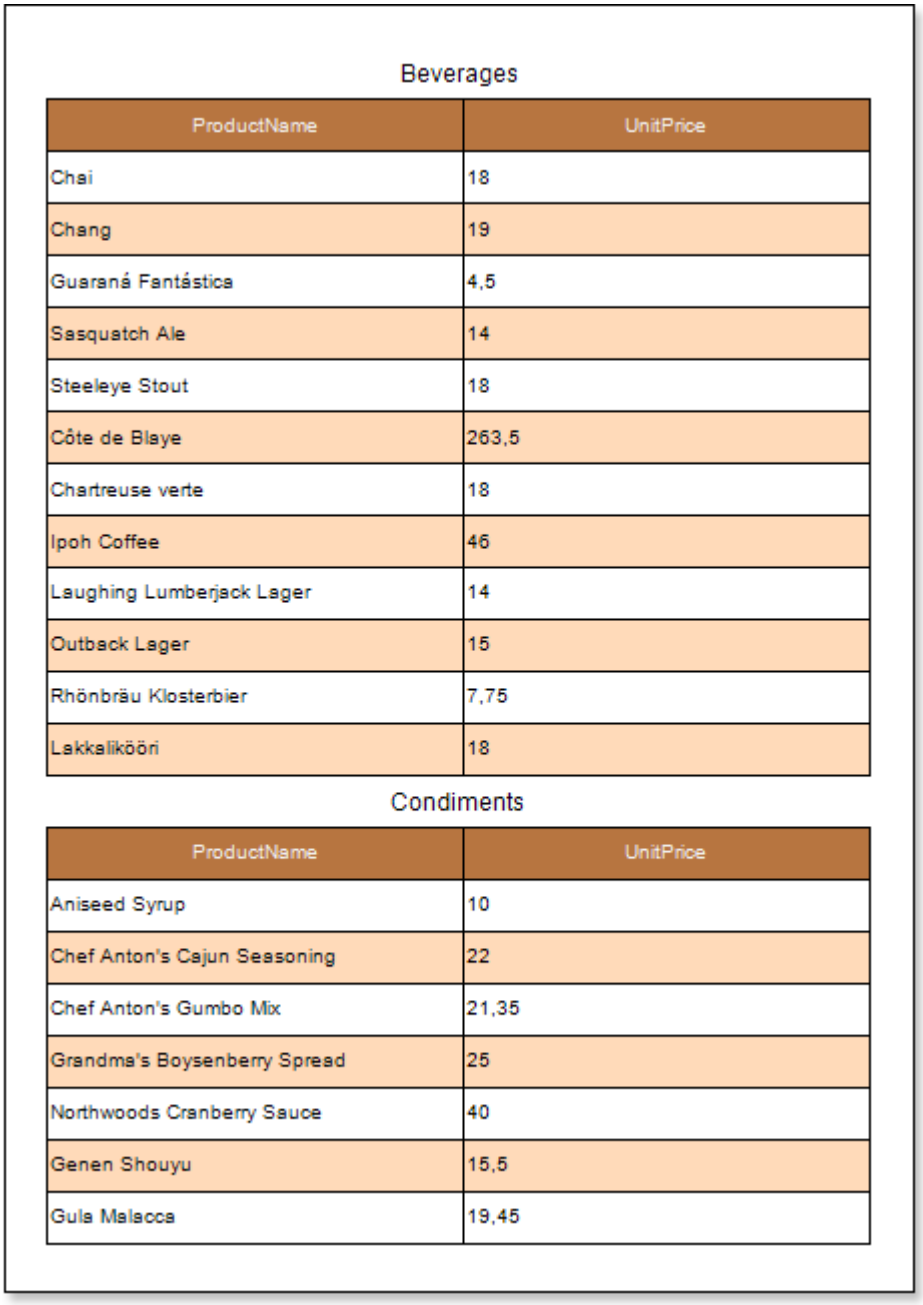

Beverages

| ProductName | UnitPrice |
|---|---|
| Chai | 18 |
| Chang | 19 |
| Guaraná Fantástica | 4,5 |
| Sasquatch Ale | 14 |
| Steeleye Stout | 18 |
| Côte de Blaye | 263,5 |
| Chartreuse verte | 18 |
| Ipoh Coffee | 46 |
| Laughing Lumberjack Lager | 14 |
| Outback Lager | 15 |
| Rhönbräu Klosterbier | 7,75 |
| Lakkalikööri | 18 |

Condiments

| ProductName | UnitPrice |
|---|---|
| Aniseed Syrup | 10 |
| Chef Anton's Cajun Seasoning | 22 |
| Chef Anton's Gumbo Mix | 21,35 |
| Grandma's Boysenberry Spread | 25 |
| Northwoods Cranberry Sauce | 40 |
| Genen Shouyu | 15,5 |
| Gula Malacca | 19,45 |

## 3.15. Report with EmptyBand

The **EmptyBand** is used to fill free space at the bottom of a page. This tutorial describes how to create a report with the **EmptyBand**:

1. Run the designer;
2. Connect the data:

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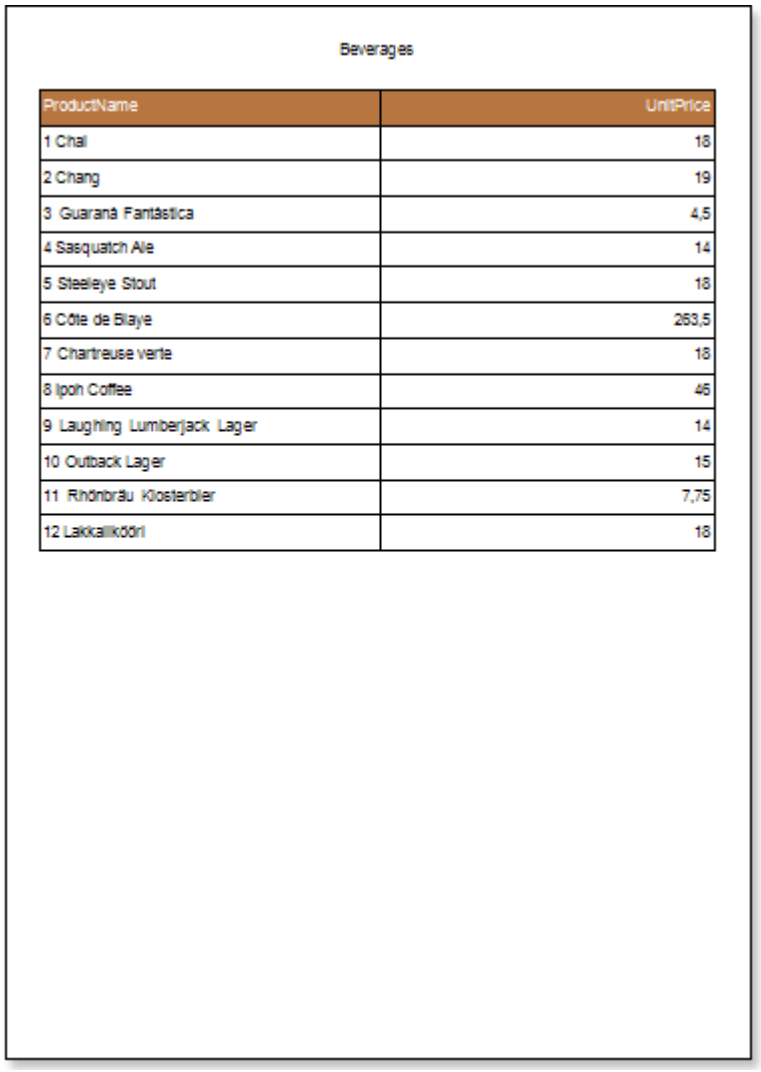
2.1. Create a **New Connection**;
2.2. Create a **New Data Source**;

3. Design a report or load a previously saved one. Consider creating a report with the **EmptyBand** on the base of the **Master-Detail** report. Suppose there is a **Master-Detail** report in which data is printed on half of a page, then to fill the empty space you can use the **EmptyBand**. The picture below shows the rendered **Master-Detail** report:



Beverages

| ProductName | UnitPrice |
|---|---|
| 1 Chai | 18 |
| 2 Chang | 19 |
| 3 Guaraná Fantástica | 4,5 |
| 4 Sasquatch Ale | 14 |
| 5 Steeleye Stout | 18 |
| 6 Côte de Blaye | 263,5 |
| 7 Chartreuse verte | 18 |
| 8 Ipoh Coffee | 46 |
| 9 Laughing Lumberjack Lager | 14 |
| 10 Outback Lager | 15 |
| 11 Rhönbräu Klosterbier | 7,75 |
| 12 Lakkalikööri | 18 |

4. Go back to the **Master-Detail** report template.

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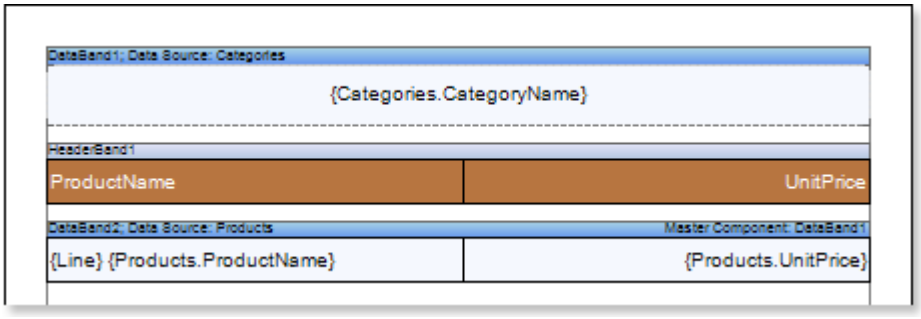
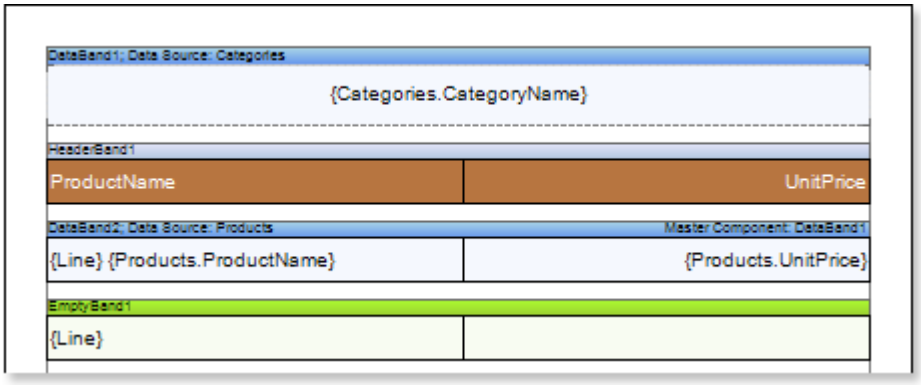



5. Add the **EmptyBand** in the report template;
6. Edit the **EmptyBand**:
6.1. Align it by height;
6.2. Change the value of required properties. For example, set the **CanGrow** property to **true**, if you want the band be grown;
6.3. Set the background color of the **EmptyBand**;
6.4. If necessary, set **Borders** of the EmptyBand);

7. Put text components with an expression in the **EmptyBand**. Where the expression is a reference to the data field. For example, put a text component with the expression: **{Line}**;
8. Edit **Text** and **TextBox** component:
   8.1. Drag and drop the text component in the **EmptyBand**;
   8.2. Change parameters of the text font: size, type, color;
   8.3. Align the text component by width and height;
   8.4. Change the background of the text component;
   8.5. Align text in the text component;
   8.6. Change the value of properties of the text component. For example, set the **WordWrap** property to **true**, if you need a text to be wrapped;
   8.7. Enable **Borders** for the text component, if required.
   8.8. Change the border color.




9. Click the **Preview** button or invoke the **Viewer**, pressing **F5** or clicking the **Preview** menu item. The picture below shows a sample of the report:

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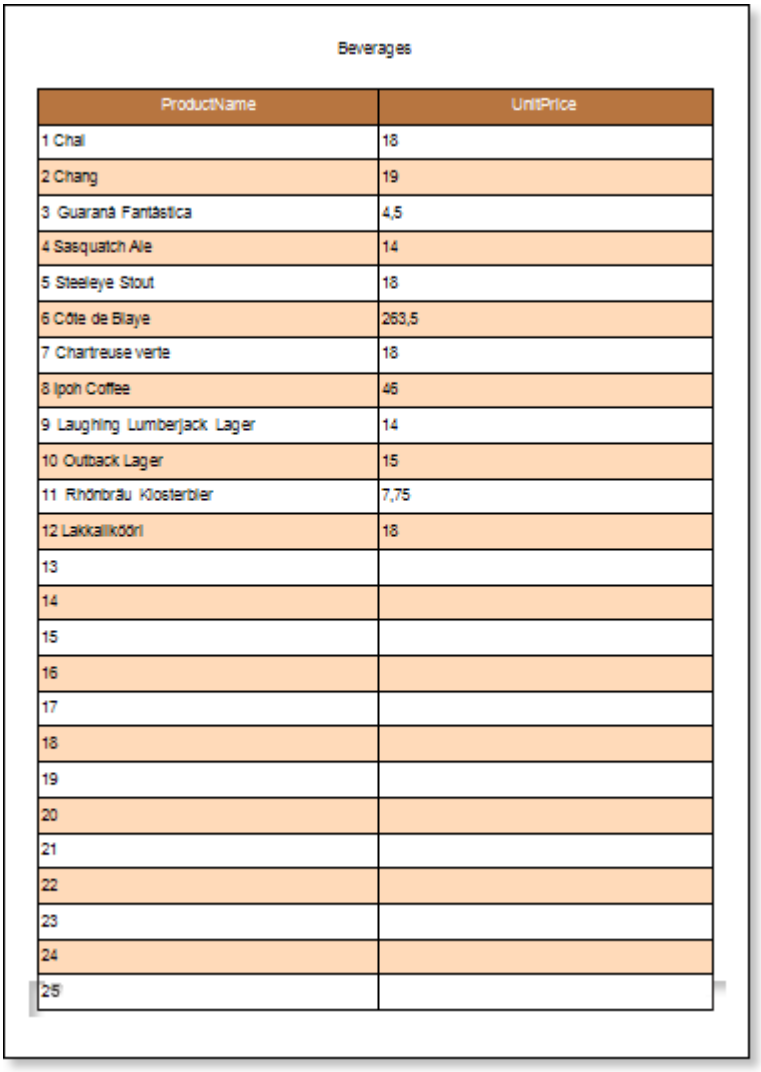

Beverages

| ProductName | UnitPrice |
|---|---|
| 1 Chai | 18 |
| 2 Chang | 19 |
| 3 Guaraná Fantástica | 4,5 |
| 4 Sasquatch Ale | 14 |
| 5 Steeleye Stout | 18 |
| 6 Côte de Blaye | 263,5 |
| 7 Chartreuse verte | 18 |
| 8 Ipoh Coffee | 46 |
| 9 Laughing Lumberjack Lager | 14 |
| 10 Outback Lager | 15 |
| 11 Rhönbräu Klosterbier | 7,75 |
| 12 Lakkalikööri | 18 |
| 13 | |
| 14 | |
| 15 | |
| 16 | |
| 17 | |
| 18 | |
| 19 | |
| 20 | |
| 21 | |
| 22 | |
| 23 | |
| 24 | |
| 25 | |

As can be seen in the picture above blank lines will be numbered and output in the report.

## Adding styles

1. Go back to the report template;
2. Select the **DataBand**;
3. Change values of **Even style** and **Odd style** properties. If values of these properties are not set, then select the **Edit Styles** in the list of values of these properties and, using **Style Designer**, create a new style. The picture below shows the **Style Designer**.

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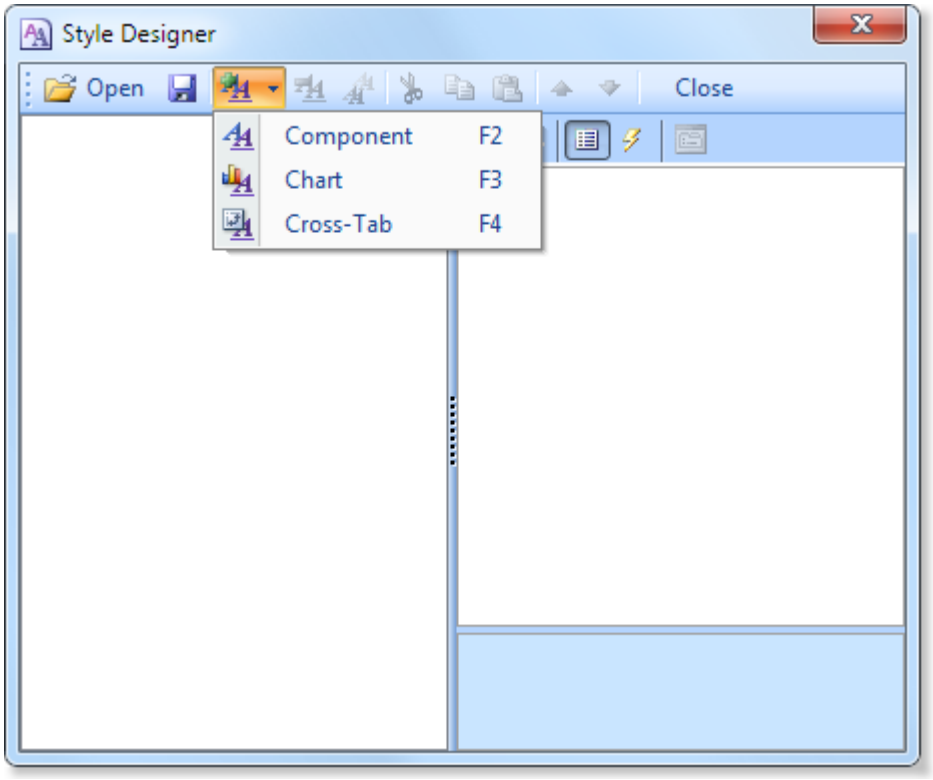
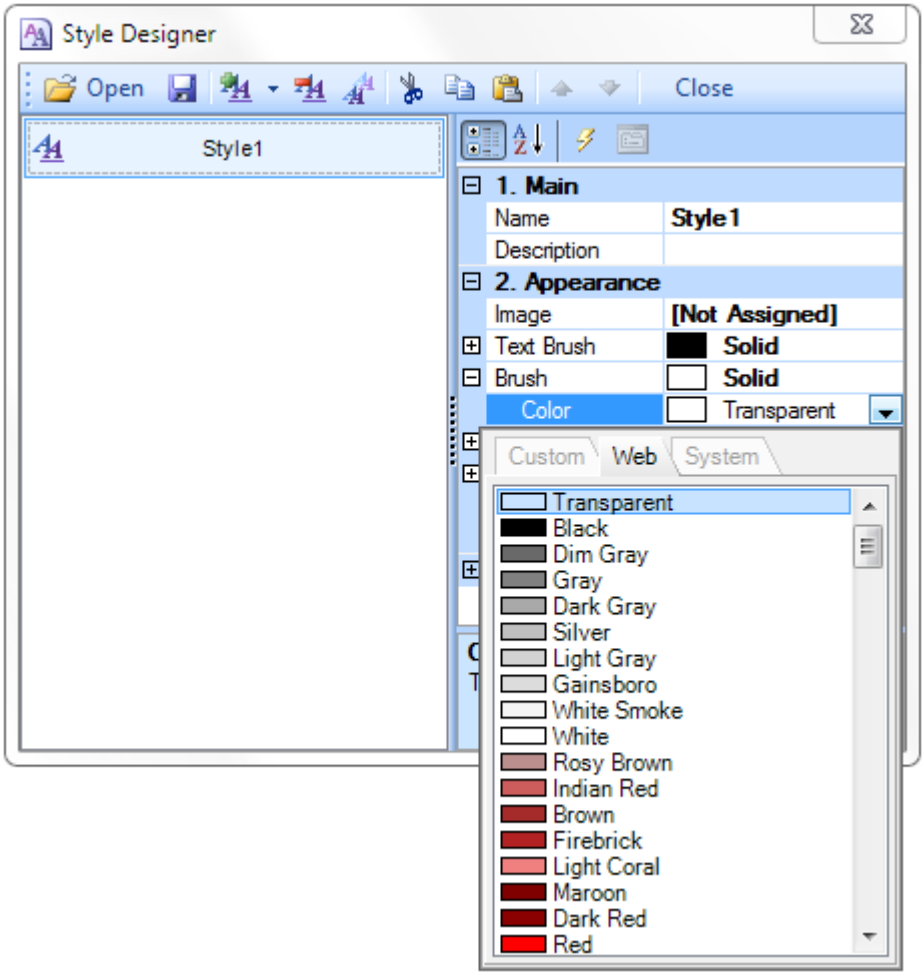



Click the **Add Style** button to start creating a style. Select **Component** from the drop down list. Set the **Brush.Color** property to change the background color of a row. The picture below shows a sample of the **Style Designer** with the list of values of the **Brush.Color** property:

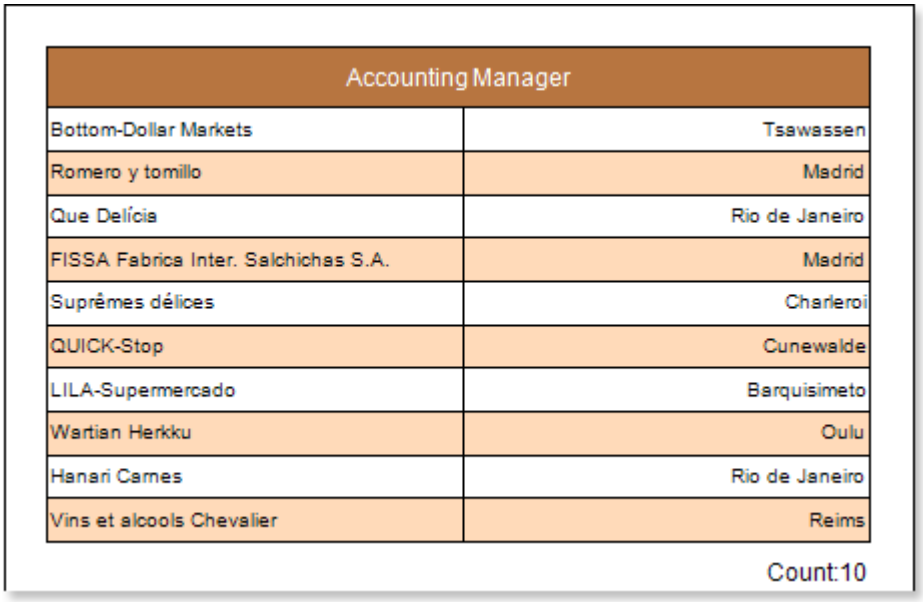
© 2003-2011 Stimulsoft




Click **Close**. Then a new value in the list of **Even style** and **Odd style** properties (a style of a list of odd and even rows) will appear.

5. To render the report, click the **Preview** button or invoke the **Viewer**, pressing **F5** or clicking the **Preview** menu item. The picture below shows a sample of a rendered report:

© 2003-2011 Stimulsoft



| Accounting Manager | |
|---|---|
| Bottom-Dollar Markets | Tsawassen |
| Romero y tomillo | Madrid |
| Que Delícia | Rio de Janeiro |
| FISSA Fabrica Inter. Salchichas S.A. | Madrid |
| Suprêmes délices | Charleroi |
| QUICK-Stop | Cunewalde |
| LILA-Supermercado | Barquisimeto |
| Wartian Herkku | Oulu |
| Hanari Carnes | Rio de Janeiro |
| Vins et alcools Chevalier | Reims |

Count:10

## 3.16. Drill-Down Report Using Page in Report

The **Drill-Down** report using the pages in the report is an interactive report in what detailed data are placed on the page of a report and the relation between master and detailed data in the report is organized with the help of the **Interaction.Drill-Down Page** property. This type of report must contain at least two pages: a one with master data, and a second with detailed ones. Follow the steps below in order to design the report:

1. Run the designer;
2. Connect the data:
    2.1. Create a **New Connection**;
    2.2. Create a **New Data Source**;

3. Put the **DataBand1** on the **Page1** and **DataBand2** on **Page2** of a report. In this case, the master data will be located on the first page, and detailed - on the second page.

4. Edit **DataBand1** and **DataBand2**:
    4.1. Align the **DataBands** vertically;

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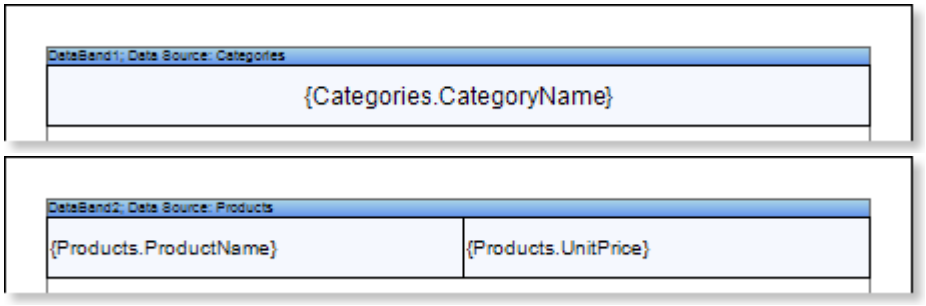
4.2. Change the value of the required properties;
4.3. Change the background color of the **DataBand**;
4.4. If necessary, set **Borders** of the **DataBand**;

5. Define a data source for **DataBands** using the **Data Source** property:

6. Put the text components with expressions. Where the expression is a reference to the data field. For example: put the text component with the **{Categories.CategoryName}** expression in the **DataBand1**, and put two text components with the **{Products.ProductName}** and **{Products.UnitePrice}** expressions in the **DataBand2**;
7. Edit text and text components located in the **DataBands**:
7.1. Drag the text component to the required place in the **DataBands**;
7.2. Align the text in a text component;
7.3. Change the value of the required properties. For example to set the **Word Wrap** property to **true**, if you want the text be wrapped;
7.4. Set **Borders** of a text component, if required.
7.5. Change the border color.




8. Select a text component in the **DataBand1**;
9. Set the **Interaction.Drill-Down Enabled** to **true**;
10. Set the Interaction.Drill-Down Page to **Page2**;
11. Set filter in the **DataBand2**, in this case, we specify the **(int) this ["CategoryID"] == Products.CategoryID** expression;
12. Edit **Drill-Down Parameter 1**:
12.1. The **Name** property should be set to **CategoryID**;
12.2. The **Expression** property should be set to **Categories.CategoryID**;

13. Click the **Preview** button or invoke the **Viewer**, pressing **F5** or clicking the **Preview** menu item . After rendering all references to data fields will be changed on data form specified fields. Data will be output in consecutive order from the database that was defined for this report. The amount of copies of the **DataBand** in the rendered report will be the same as the amount of data rows in the database. The picture below shows a sample of a report:

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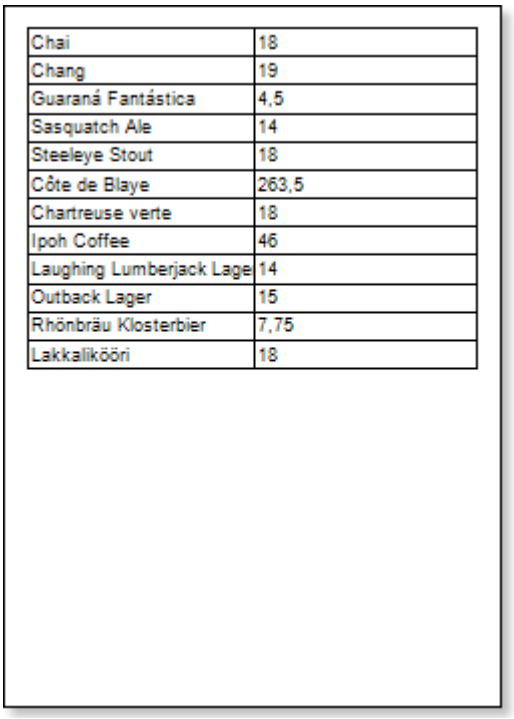
When you click the **Beverages**, the user will see the detailed data that correspond to filtering conditions and parameters of detailing. The picture below shows a page of a rendered report with detailed data of the **Beverages** entry:




14. Go back to the report template;
15. Add other bands to a report template, for example, add the **HeaderBand** to the **Page2** of a

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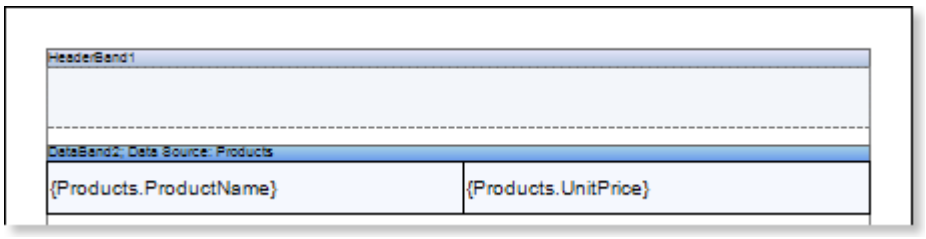
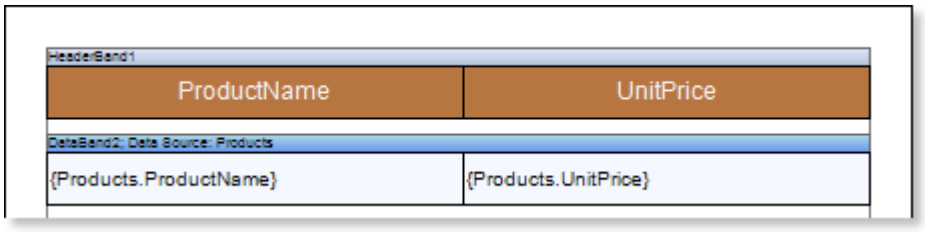
report;

16. Edit the band:
    16.1. Align it by height;
    16.2. Change values of properties, if required;
    16.3. Change the background of the band;
    16.4. Enable **Borders**, if required;
    16.5. Set the border color.




17. Put a text component with an expression in this band. The expression in the text component is a header in the **HeaderBand**.
18. Edit text and text components:
    18.1. Drag and drop the text component in the band;
    18.2. Change font options: size, type, color;
    18.3. Align text component by height and width;
    18.4. Change the background of the text component;
    18.5. Align text in the text component;
    18.6. Change values of text component properties, if required;
    18.7. Enable **Borders** of the text component, if required;
    18.8. Set the border color.




19. Click the **Preview** button or invoke the **Viewer**, pressing **F5** or clicking the **Preview** menu item . After rendering all references to data fields will be changed on data form specified fields. Data will be output in consecutive order from the database that was defined for this report. The amount of copies of the **DataBand** in the rendered report will be the same as the amount of data rows in the database. The picture below shows the structure of a report, i.e. shows the ratio of detailed data to the master **Condiments** entry:

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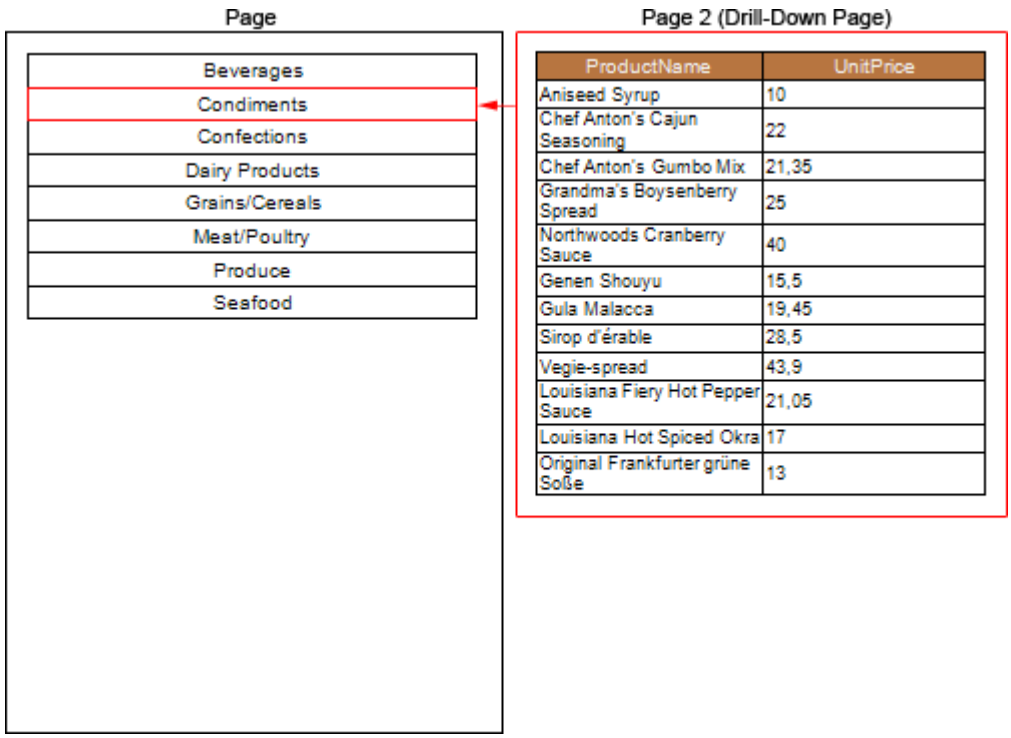


## Adding styles

1. Go back to the report template;
2. Select the **DataBand**;
3. Change values of **Even style** and **Odd style** properties. If values of these properties are not set, then select the **Edit Styles** in the list of values of these properties and, using **Style Designer**, create a new style. The picture below shows the **Style Designer**.

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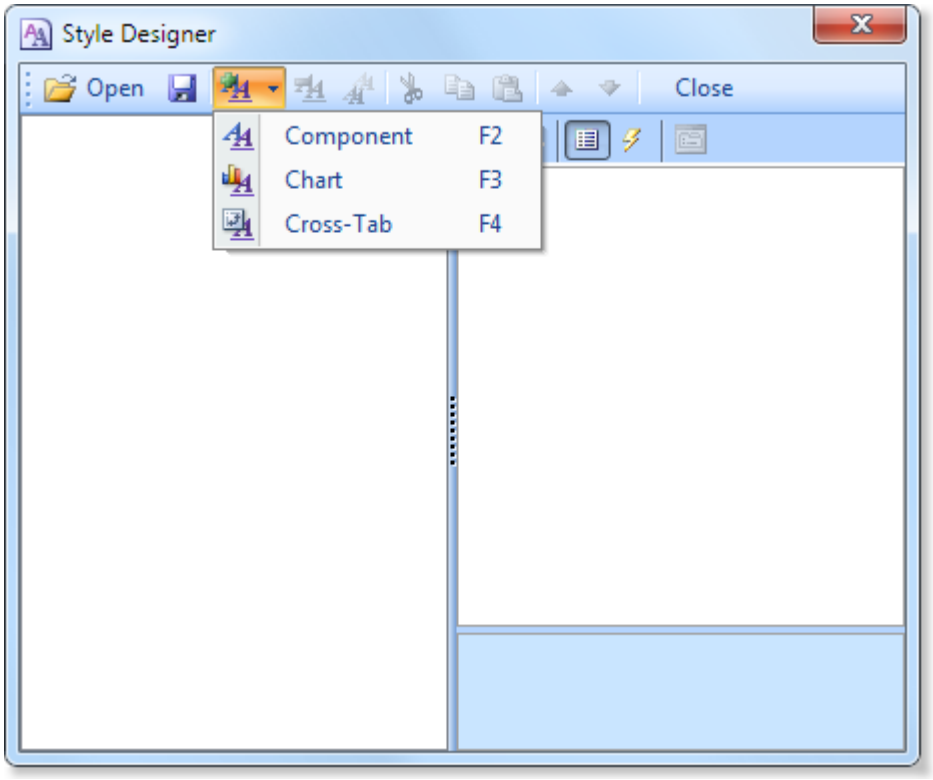
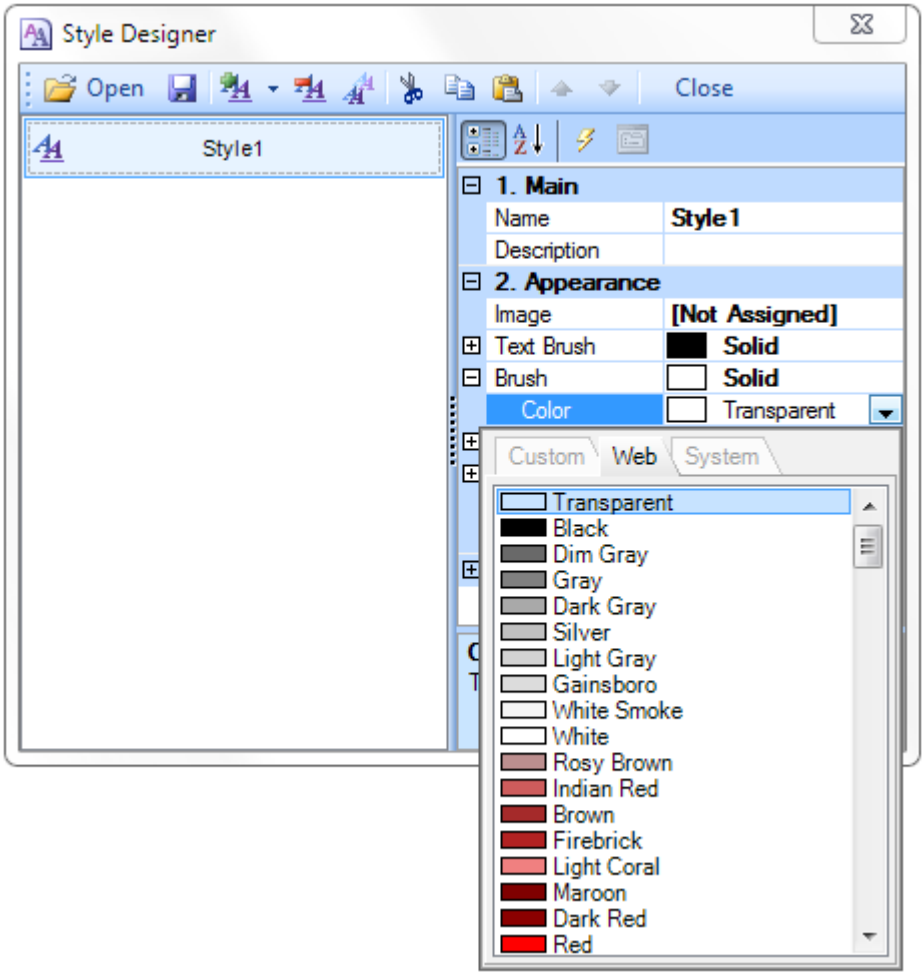



Click the **Add Style** button to start creating a style. Select **Component** from the drop down list. Set the **Brush.Color** property to change the background color of a row. The picture below shows a sample of the **Style Designer** with the list of values of the **Brush.Color** property:

© 2003-2011 Stimulsoft




Click **Close**. Then a new value in the list of **Even style** and **Odd style** properties (a style of a list of odd and even rows) will appear.

5. The picture below shows the structure of a report, i.e. shows the ratio of detailed data to the **Confections** master entry with different styles even/odd rows of the **DataBand**:

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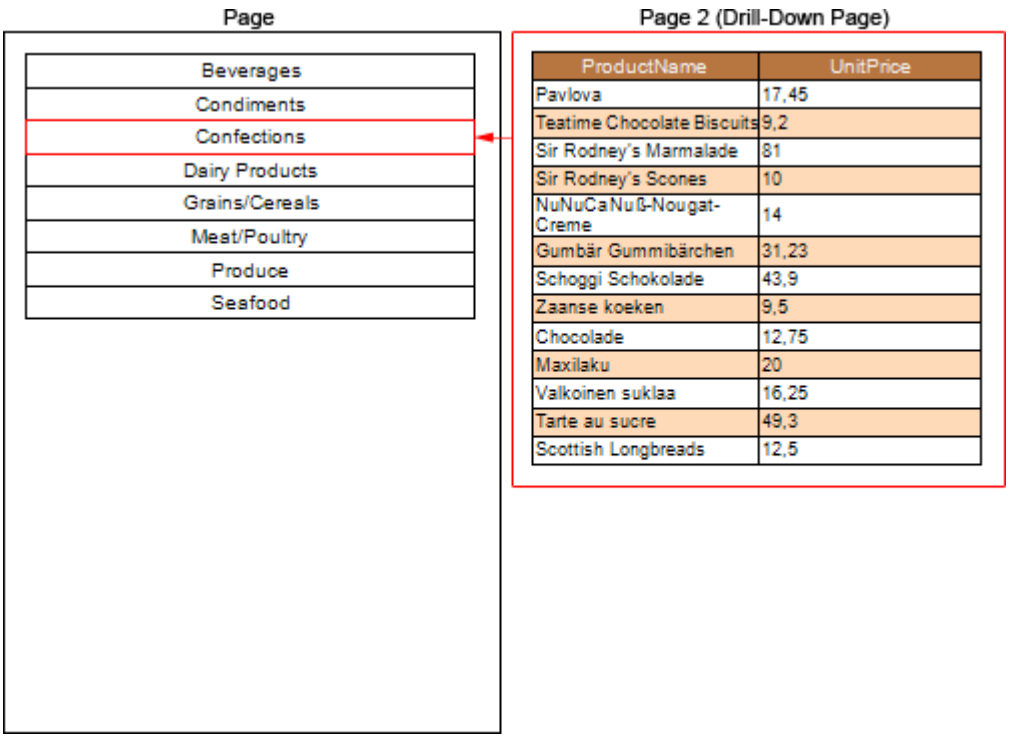


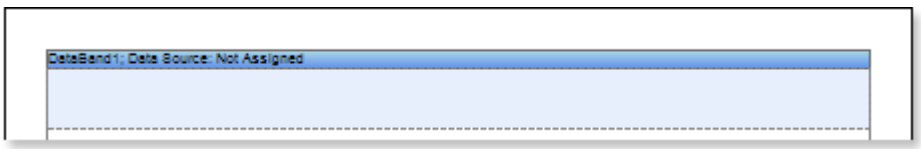

## 3.17. Drill-Down Report Using External Report

Drill-Down report using external report is an interactive report in what detailed data are placed in an external report and the relationship between master and detailed data in reports is organized using the **Interaction.Drill-Down Report** property. Follow the steps below in order to design the report:

### Creating a report with detailed data

1. Run the designer;
2. Connect the data:
   2.1. Create a **New Connection**;
   2.2. Create a **New Data Source**;

3. Put the **DataBand** on a report page:




4. Edit the **DataBand**:

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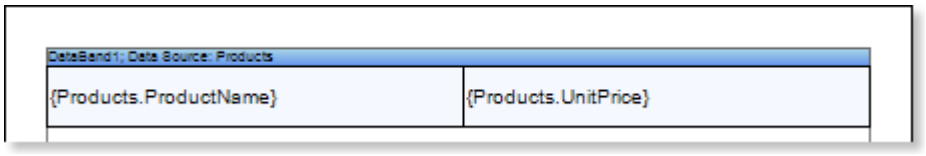
4.1. Align the **DataBand**;
4.2. Change the values of properties;
4.3. Set the background color of the **DataBand**;
4.4. Set **Borders**, if required;
4.5. Set the border color.

5. Specify the data source in **DataBand** using the **Data Source** property:

6. Put text components with expressions in the **DataBand**. Where the expression is a reference to the data field. For example: put two text components with the **{Products.ProductName}** and **{Products.UnitePrice}** expressions in the **DataBand**;
7. Edit text and text components located in the **DataBand**:
   7.1. Drag the text component to the required place in the **DataBand**;
   7.2. Align the text in a text component;
   7.3. Change the value of the required properties. For example to set the **Word Wrap** property to **true**, if you want the text be wrapped;
   7.4. Set **Borders** of a text component, if required;
   7.5. Change the border color.




8. Click the **Preview** button or invoke the **Viewer**, pressing **F5** or clicking the **Preview** menu item. After rendering all references to data fields will be changed on data form specified fields. Data will be output in consecutive order from the database that was defined for this report. The amount of copies of the **DataBand** in the rendered report will be the same as the amount of data rows in the database. The picture below shows a sample of a report:

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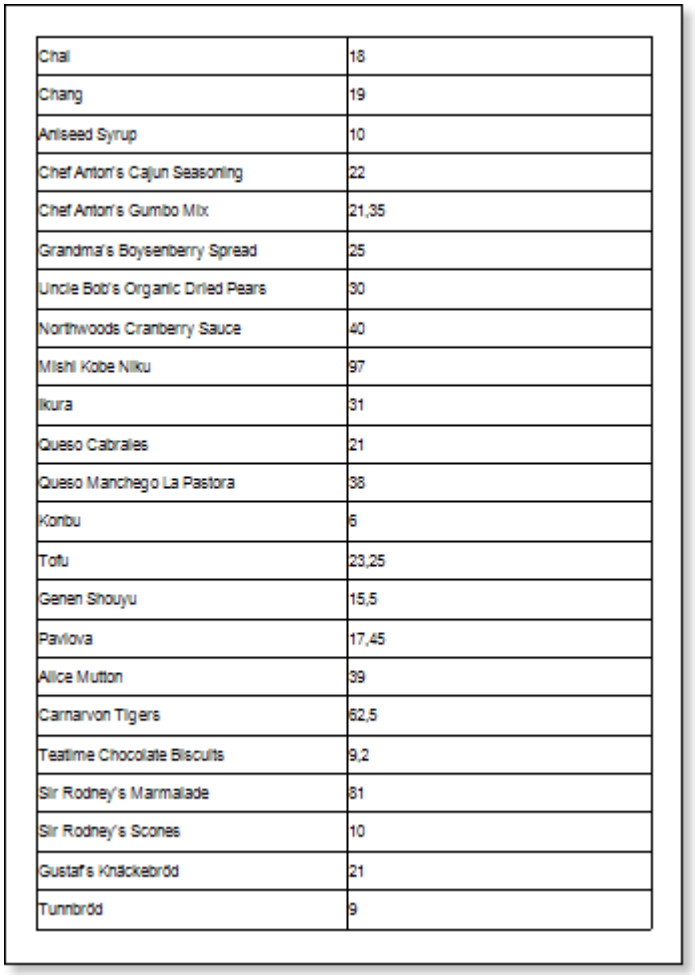
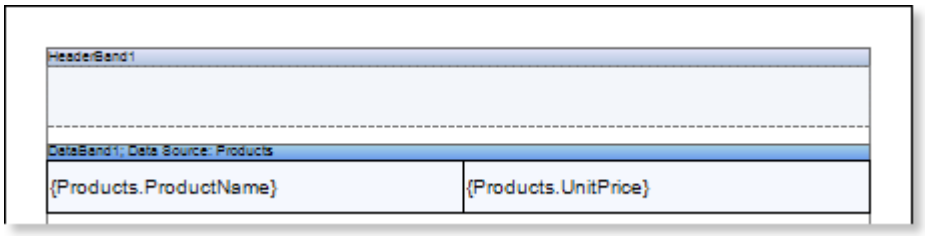


| | |
|---|---|
| Chai | 18 |
| Chang | 19 |
| Aniseed Syrup | 10 |
| Chef Anton's Cajun Seasoning | 22 |
| Chef Anton's Gumbo Mix | 21,35 |
| Grandma's Boysenberry Spread | 25 |
| Uncle Bob's Organic Dried Pears | 30 |
| Northwoods Cranberry Sauce | 40 |
| Mishi Kobe Niku | 97 |
| Ikura | 31 |
| Queso Cabrales | 21 |
| Queso Manchego La Pastora | 38 |
| Konbu | 6 |
| Tofu | 23,25 |
| Genen Shouyu | 15,5 |
| Pavlova | 17,45 |
| Alice Mutton | 39 |
| Carnarvon Tigers | 62,5 |
| Teatime Chocolate Biscuits | 9,2 |
| Sir Rodney's Marmalade | 81 |
| Sir Rodney's Scones | 10 |
| Gustaf's Knäckebröd | 21 |
| Tunnbröd | 9 |

9. Go back to the report template;
10. Add other bands to a report template, for example, add the **HeaderBand** to the report page;
11. Edit the band:
    11.1. Align it by height;
    11.2. Change values of properties, if required;
    11.3. Change the background of the band;
    11.4. Enable **Borders**, if required;
    11.5. Set the border color.




12. Put a text component with an expression in this band. The expression in the text component is a header in the **HeaderBand**.
13. Edit text and text components:
    13.1. Drag and drop the text component in the band;

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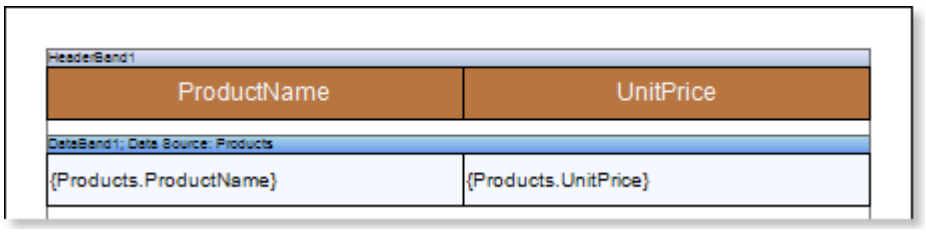
13.2. Change font options: size, type, color;
13.3. Align text component by height and width;
13.4. Change the background of the text component;
13.5. Align text in the text component;
13.6. Change values of text component properties, if required;
13.7. Enable **Borders** of the text component, if required;
13.8. Set the border color.




14. Click the **Preview** button or invoke the **Viewer**, pressing **F5** or clicking the **Preview** menu item . After rendering all references to data fields will be changed on data form specified fields. Data will be output in consecutive order from the database that was defined for this report. The amount of copies of the **DataBand** in the rendered report will be the same as the amount of data rows in the database. The picture below shows a sample of a report:

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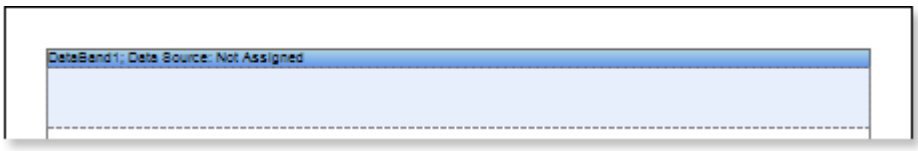
| ProductName | UnitPrice |
|---|---|
| Chai | 18 |
| Chang | 19 |
| Aniseed Syrup | 10 |
| Chef Anton's Cajun Seasoning | 22 |
| Chef Anton's Gumbo Mix | 21,35 |
| Grandma's Boysenberry Spread | 25 |
| Uncle Bob's Organic Dried Pears | 30 |
| Northwoods Cranberry Sauce | 40 |
| Mishi Kobe Niku | 97 |
| Ikura | 31 |
| Queso Cabrales | 21 |
| Queso Manchego La Pastora | 38 |
| Konbu | 6 |
| Tofu | 23,25 |
| Genen Shouyu | 15,5 |
| Pavlova | 17,45 |
| Alice Mutton | 39 |
| Carnarvon Tigers | 62,5 |
| Teatime Chocolate Biscuits | 9,2 |
| Sir Rodney's Marmalade | 81 |
| Sir Rodney's Scones | 10 |
| Gustaf's Knäckebröd | 21 |

15. Go back to the report template;;
16. Set filtering in the **DataBand**. For example, set the following expression: **CategoryID == Products.CategoryID**;
17. Save the report. For example, save the report with detailed data on a local disk in the root directory D:\\, with the **Drill-Down Report** name, i.e. full path to the file will be **D:\\ Drill-Down Report.mrt**.

## Creating a report with master data

1. Run the designer;
2. Connect the data:
   2.1. Create a **New Connection**;
   2.2. Create a **New Data Source**;

3. Put the **DataBand** on a report page:

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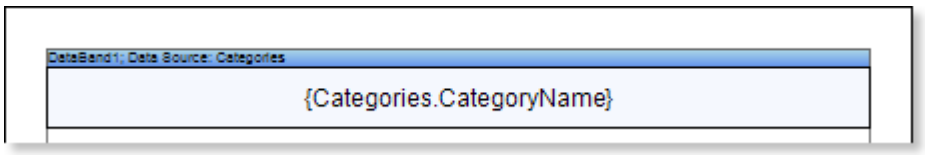
4. Edit the **DataBand**:
   4.1. Align the **DataBand**;
   4.2. Change the values of properties;
   4.3. Set the background color of the **DataBand**;
   4.4. Set **Borders**, if required;
   4.5. Set the border color.

5. Specify the data source in **DataBand** using the **Data Source** property:

6. Put a text component with expressions in the **DataBand**. Where the expression is a reference to the data field. For example: put the text component with the **{Categories.CategoryName}** expression in the **DataBand**;
7. Edit text and text components located in the **DataBand**:
   7.1. Drag the text component to the required place in the **DataBand**;
   7.2. Align the text in a text component;
   7.3. Change the value of the required properties. For example to set the **Word Wrap** property to **true**, if you want the text be wrapped;
   7.4. Set **Borders** of a text component, if required;
   7.5. Change the border color.




8. Click the **Preview** button or invoke the **Viewer**, pressing **F5** or clicking the **Preview** menu item. After rendering all references to data fields will be changed on data form specified fields. Data will be output in consecutive order from the database that was defined for this report. The amount of copies of the **DataBand** in the rendered report will be the same as the amount of data rows in the database. The picture below shows a sample of a report:

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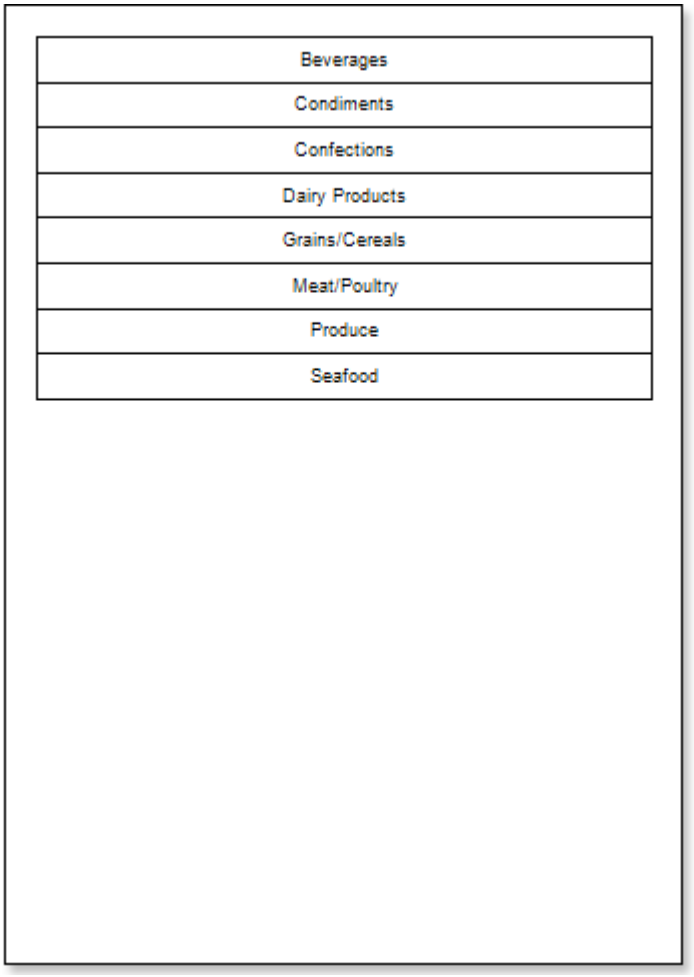


## Creating an interactive report

1. Go back to the report template with the master data;
2. Select a text component in the **DataBand**;
3. Set the **Interaction.Drill-Down Enabled** property to **true**;
4. Set the **Interaction.Drill-Down Report** property. Where the value of this property is the full path to the report with detailed data. In our tutorial, the **Interaction.Drill-Down Report** property will be set to **D:\\Drill-Down Report.mrt**;
5. Edit **Drill-Down Parameter 1**:
    5.1. The **Name** property should be set to **CategoryID**;
    5.2. The **Expression** property should be set to **Categories.CategoryID**;

6. Click the **Preview** button or invoke the **Viewer**, pressing **F5** or clicking the **Preview** menu item. After rendering all references to data fields will be changed on data form specified fields. Data will be output in consecutive order from the database that was defined for this report. The amount of copies of the **DataBand** in the rendered report will be the same as the amount of data rows in the database. The picture below shows a sample of a report:

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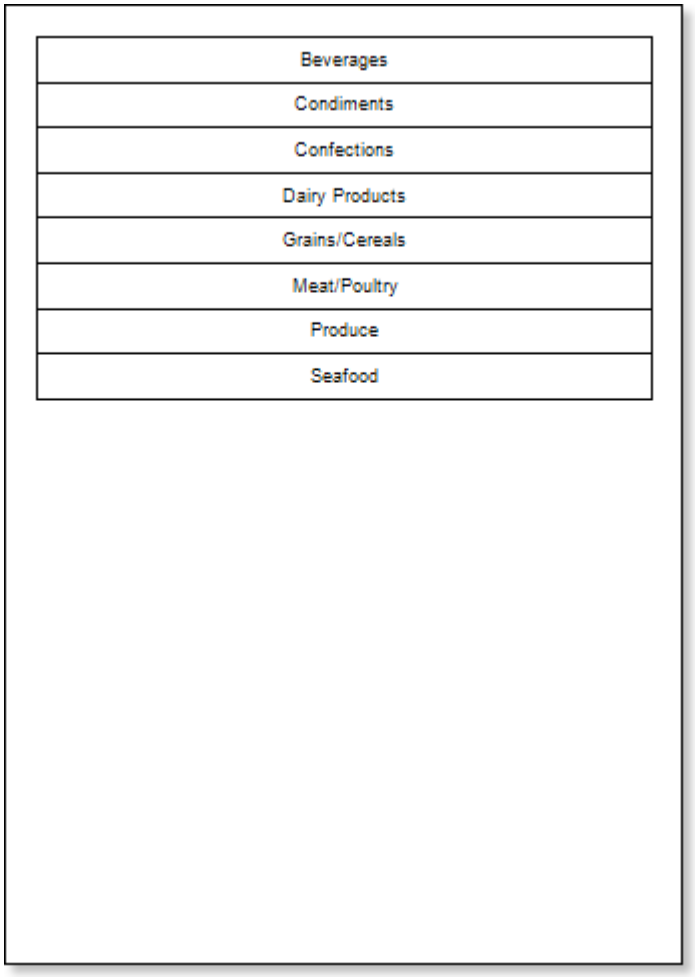


When you click the **Beverages**, the user will see the detailed data that correspond to filtering conditions and parameters of detailing. The picture below shows a page of a rendered report with detailed data of the **Beverages** entry:

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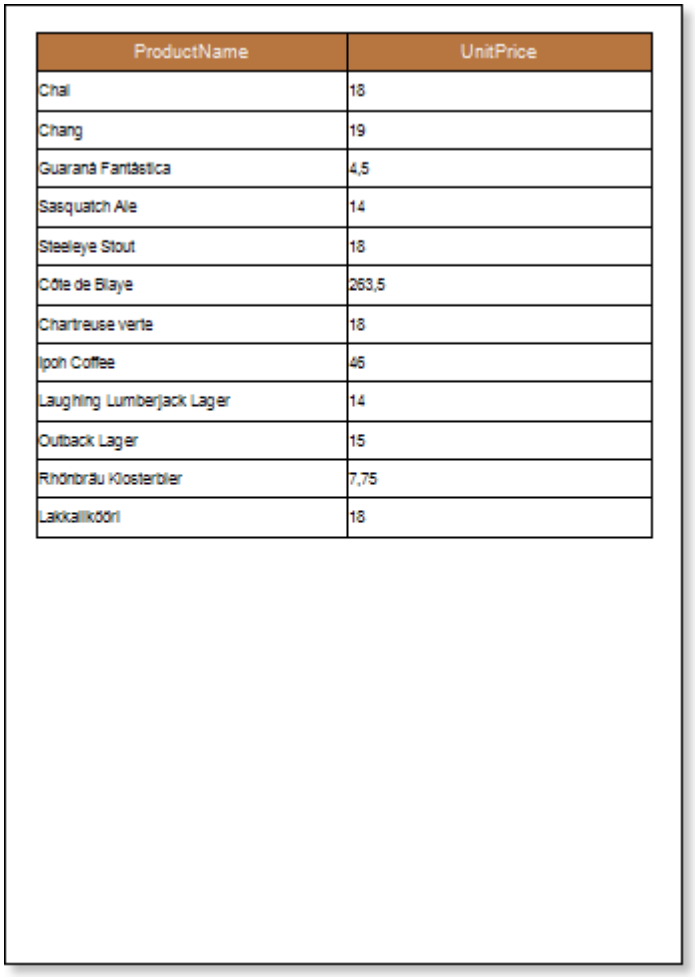

| ProductName | UnitPrice |
|---|---|
| Chai | 18 |
| Chang | 19 |
| Guaraná Fantástica | 4,5 |
| Sasquatch Ale | 14 |
| Steeleye Stout | 18 |
| Côte de Blaye | 263,5 |
| Chartreuse verte | 18 |
| Ipoh Coffee | 46 |
| Laughing Lumberjack Lager | 14 |
| Outback Lager | 15 |
| Rhönbräu Klosterbier | 7,75 |
| Lakkalikööri | 18 |

## Adding styles

1. Go back to the report template;
2. Select the **DataBand**;
3. Change values of **Even style** and **Odd style** properties. If values of these properties are not set, then select the **Edit Styles** in the list of values of these properties and, using **Style Designer**, create a new style. The picture below shows the **Style Designer**.

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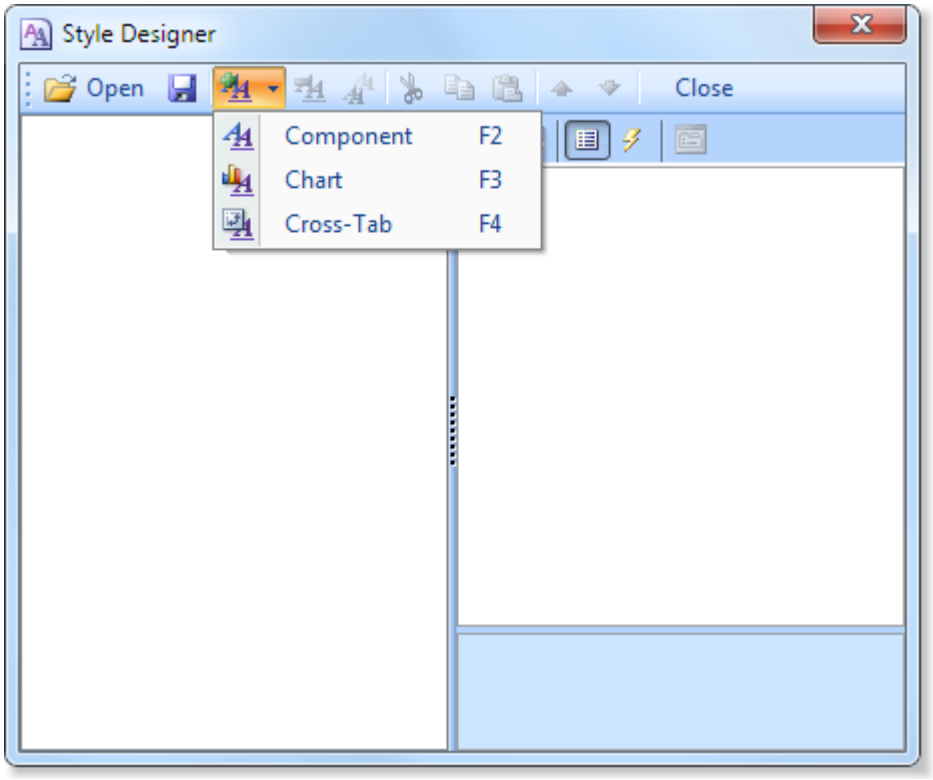


Click the **Add Style** button to start creating a style. Select **Component** from the drop down list. Set the **Brush.Color** property to change the background color of a row. The picture below shows a sample of the **Style Designer** with the list of values of the **Brush.Color** property:

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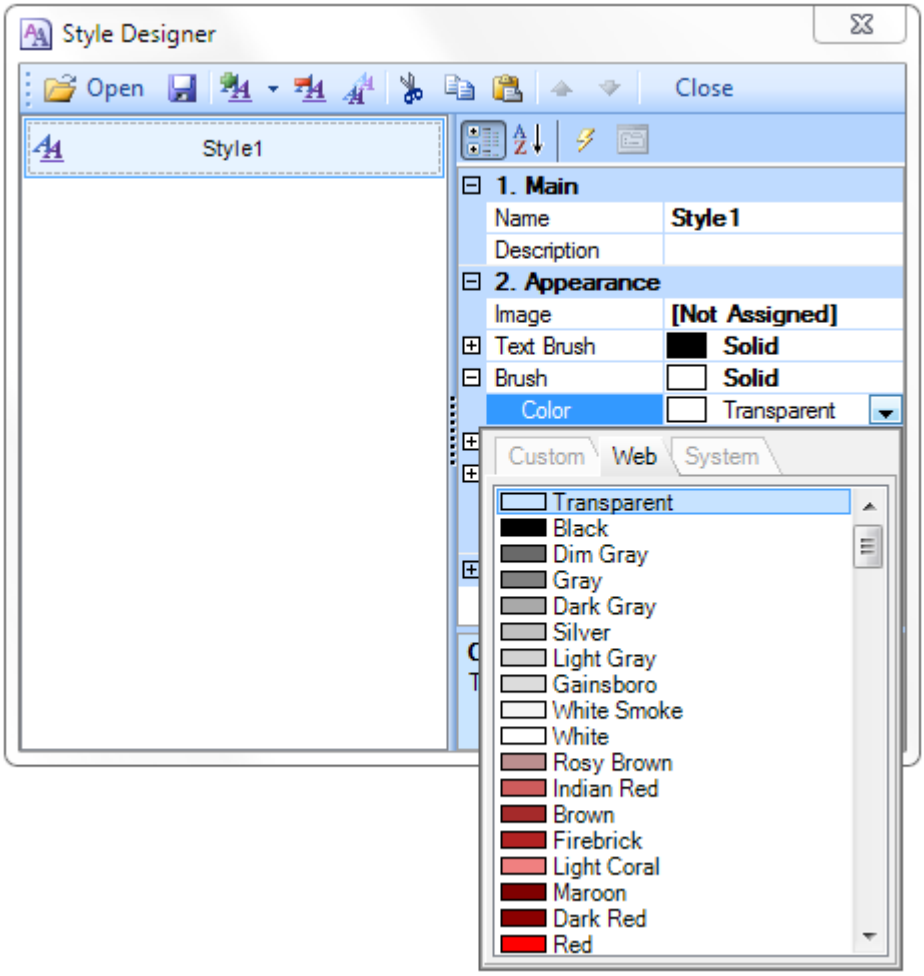


Click **Close**. Then a new value in the list of **Even style** and **Odd style** properties (a style of a list of odd and even rows) will appear.

1. Save changes in the detailed report by clicking the **Save** button;
2. Open the report with master data in the designer;
3. Click the **Preview** button or invoke the **Viewer**, pressing **F5** or clicking the **Preview** menu item. The picture below shows the structure of the report, i.e. shows the ratio of the detailed data to the **Meat/Poultry** master entries with different styles of even/odd rows of the **DataBand** in the detailing report:

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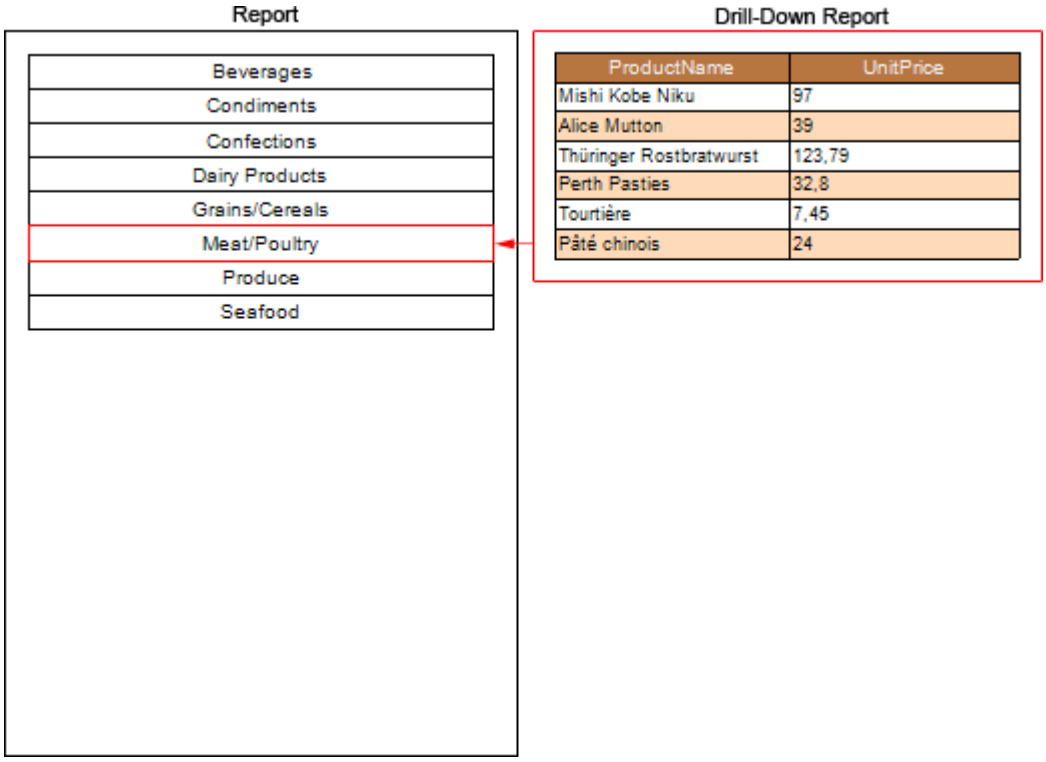


## 3.18. No Bands Report

If it is necessary to display data from only one entry of the data source or data from variables or other data sources that are not lists, the report can be created without the bands. In this case, components are placed directly on a report page.

1. Run the designer;
2. Connect the data:
    2.1. Create a **New Connection**;
    2.2. Create a **New Data Source**;

3. Put the **Image** component with the image on a page;
4. Edit the **Image** component and an image:
    4.1. Drag and drop the **Image** component on the report page;
    4.2. Align the **Image** component by height and width;
    4.3. Set the background color of the **Image** component;
    4.4. Align the image in the component;
    4.5. Change values of the properties of the **Image** component. For example to set the **Print** property to **true**, if you want this component be printed;
    4.6. If necessary, set **Borders** of the **Image** component;
    4.7. Set the border color.

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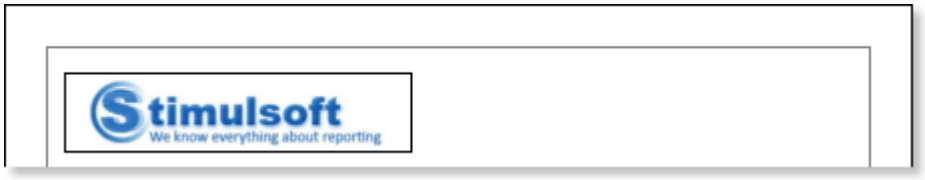
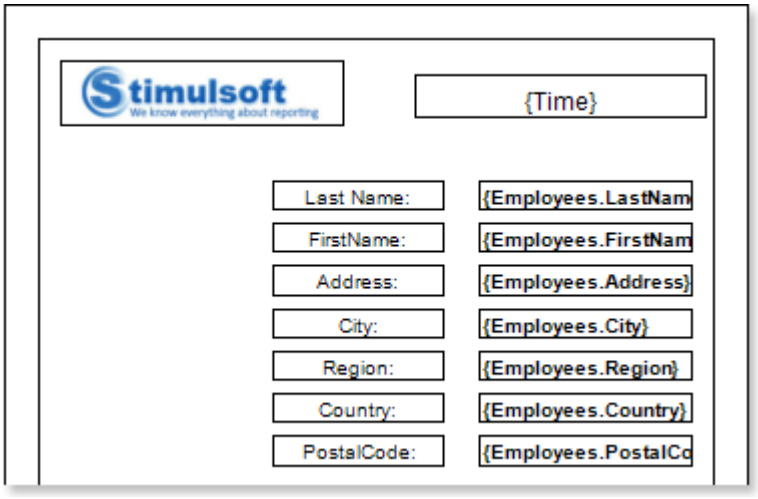



5. Put **TextBoxes** with the text on a page. In this report, weput 15 Text components. The **TextBox1** contains the **{Time}** system variable, which will display the current time and date. **2-8 TextBoxes** contain the row names in the address box, and **9-15 TextBoxes** will include links to data sources;
6. Edit text and text components:
   6.1. Drag and drop the text component in the band;
   6.2. Change font options: size, type, color;
   6.3. Align text component by height and width;
   6.4. Change the background of the text component;
   6.5. Align text in the text component;
   6.6. Change values of text component properties, if required;
   6.7. Enable **Borders** of the text component, if required;
   6.8. Set the border color.




7. Click the **Preview** button or invoke the **Viewer**, pressing **F5** or clicking the **Preview** menu item:

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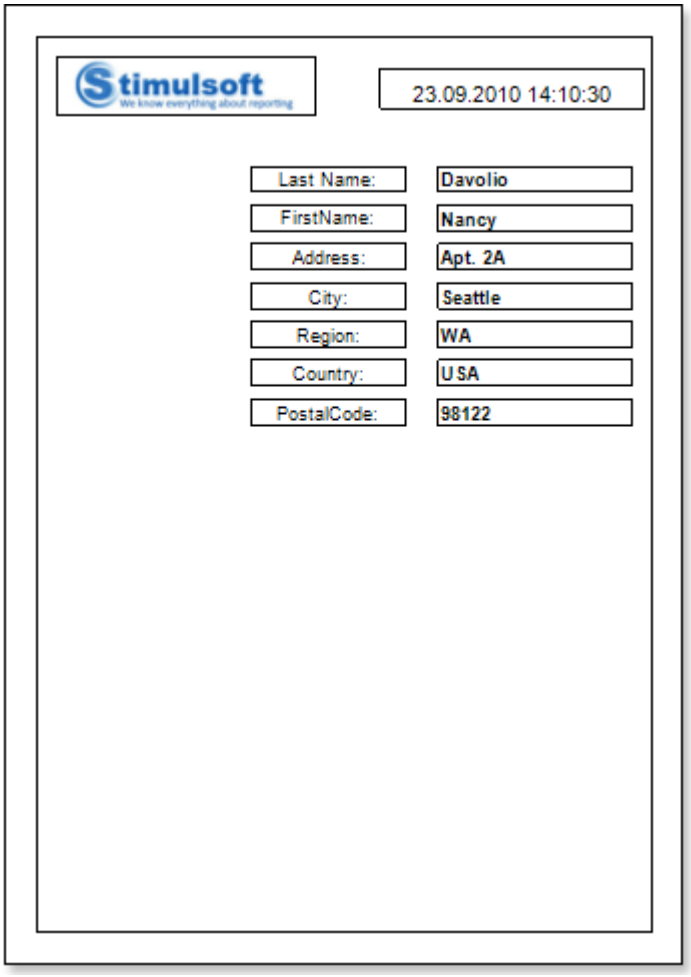
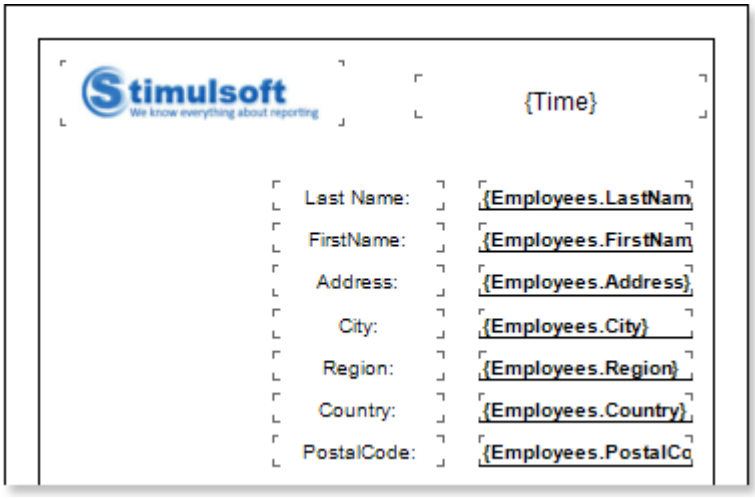



8. Go back to the report template;
9. Disable **Borders** of all components. Enable bottom borders for **9-15 TextBoxes**:




10. Click the **Preview** button or invoke the **Viewer**, pressing **F5** or clicking the **Preview** menu

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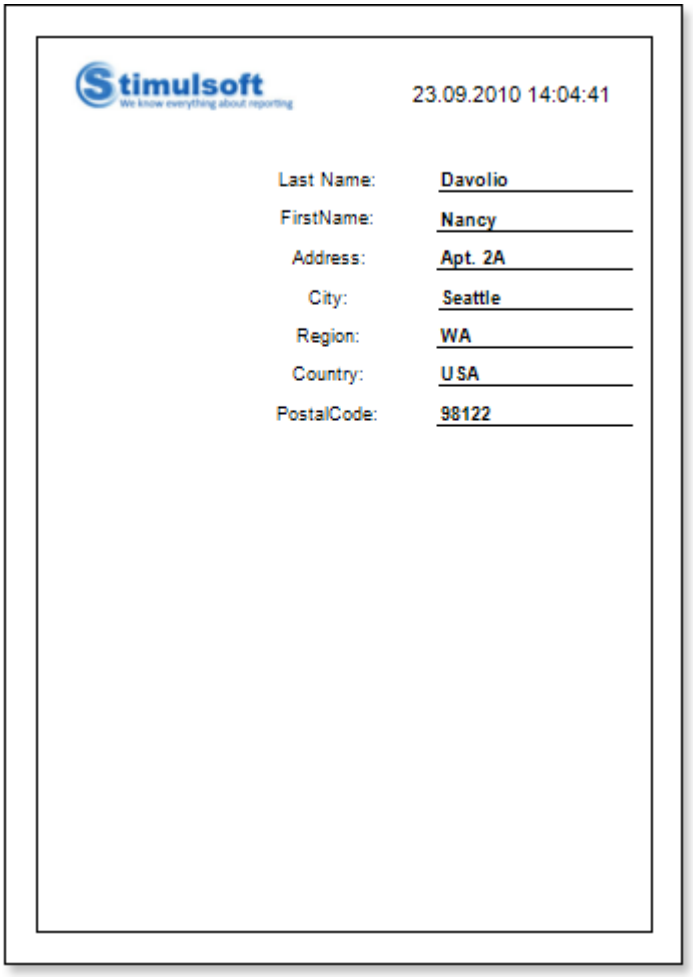
item.




## 3.19. Report with Several Pages in Template

If you want to design a report, for example, with the cover page, the report template will consist of minimum two pages: the cover page and page with data. Creating a report with several pages in the template includes the following steps:

### Creating a cover page

1. Run the designer;
2. Connect the data:
   2.1. Create a **New Connection**;
   2.2. Create a **New Data Source**;

3. Put an Image component on a report page;
4. Edit the Image component:

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4.1. Drag the **Image** component to the desired location on the report page;
4.2. Align the **Image** component by height and width;
4.3. Set the background color of the component;
4.4. Align the image in the Image component;
4.5. Set properties of the **Image** component. For example, set the **Print** property to **true**, if you want this component be printed;
4.6. Set **Borders** of the component, if required;
4.7. Set the border color.

5. On the report page Text components should be placed. We put 9 text components on this page. **TextBox1** will contain the **Report on Employees** text, which is the title of the report. **TextBoxes 2-5** will contain names in the address box, and **TextBoxes 6-9** will contain references to the source data;
6. Edit text and text components:
6.1. Drag and drop the text component in the band;
6.2. Change font options: size, type, color;
6.3. Align text component by height and width;
6.4. Change the background of the text component;
6.5. Align text in the text component;
6.6. Change values of text component properties, if required;
6.7. Enable **Borders** of the text component, if required;
6.8. Set the border color.

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7. Click the **Preview** button or invoke the **Viewer**, pressing **F5** or clicking the **Preview** menu item:

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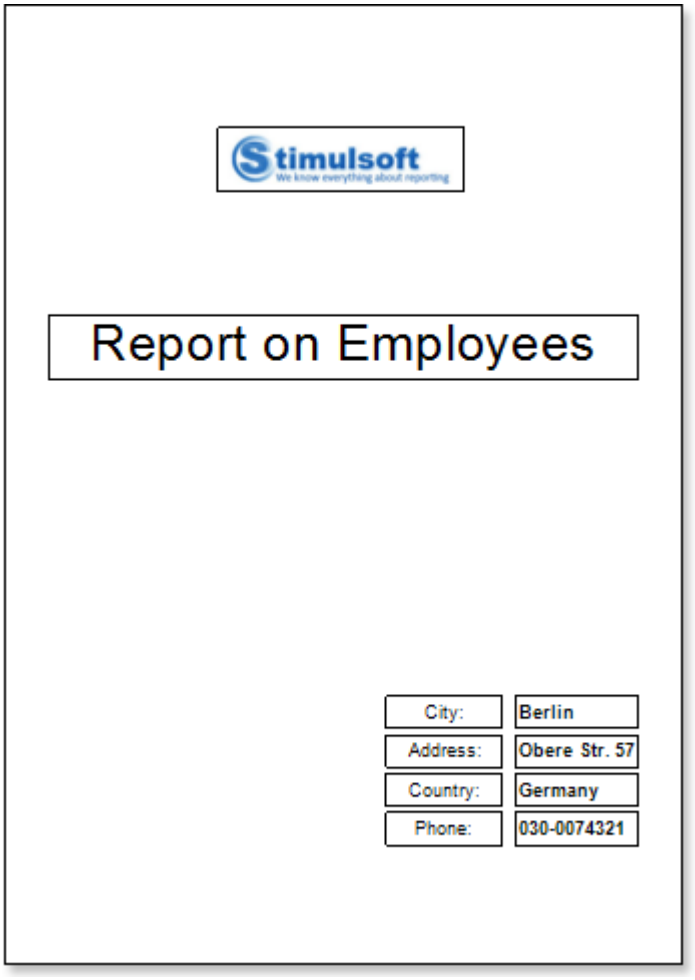


8. Go back to the report template;
9. Disable **Borders** for all components. Enable only the bottom borders in **TextBoxes 6-9**. The figure below submitted revised report template:

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10. Create a second page in a report template and start editing it;

## Creating a page with data

1. Put the **DataBand** page on the report template.

2. Edit **DataBand**:
   2.1. Align the **DataBand** by height;
   2.2. Change values of band properties. For example, set the **Can Break** property to **true**, if you wish the data band to be broken;

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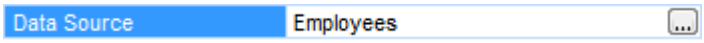
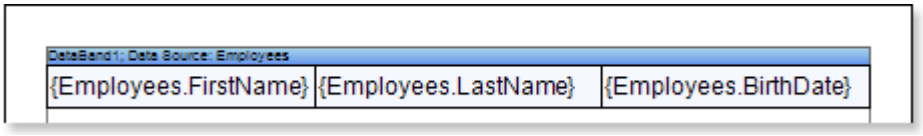
2.3. Change the **DataBand** background;
2.4. Enable **Borders** for the **DataBand**, if required;
2.5. Change the border color.

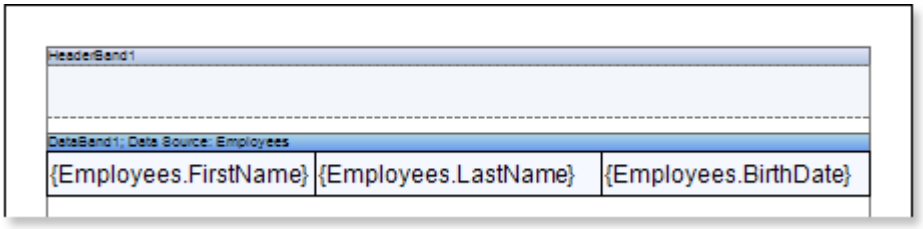
3. Specify the data source in the **DataBand** using the **Data Source** property:




4. Put text components with expressions on **DataBands**. Where expression is a reference to the data field. For example, put two text components with the following expressions:**{Employees.FirstName}, {Employees.LastName}** and **{Employees.BirthDate}**;
5. Edit **Text** and **TextBox** component:
5.1. Drag and drop the text component in **DataBands**;
5.2. Change parameters of the text font: size, type, color;
5.3. Align the text component by width and height;
5.4. Change the background of the text component;
5.5. Align text in the text component;
5.6. Change the value of properties of the text component. For example, set the **Word Wrap** property to **true**, if you need a text to be wrapped;
5.7. Enable **Borders** for the text component, if required.
5.8. Change the border color.




6. Add other bands to the report template, for example, the **HeaderBand**;
7. Edit this bands:
7.1. Align it by height;
7.2. Change values of properties, if required;
7.3. Change the background of bands;
7.4. Enable **Borders**, if required;
7.5. Set the border color.




8. Put text components with expressions in the the band. The expression in the text component is a header in the **HeaderBand**.
9. Edit text and text component:
9.1. Drag and drop the text component in the band;
9.2. Change font options: size, type, color;
9.3. Align text component by height and width;
9.4. Change the background of the text component;
9.5. Align text in the text component;
9.6. Change values of text component properties, if required;

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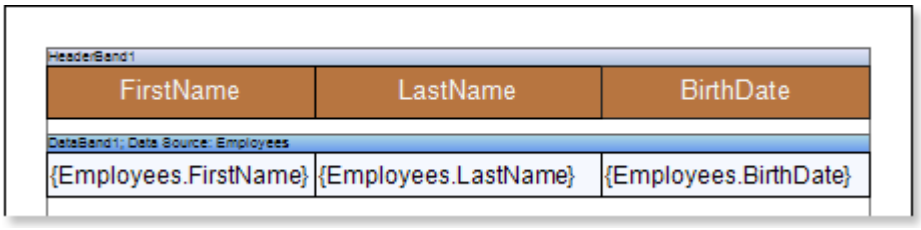
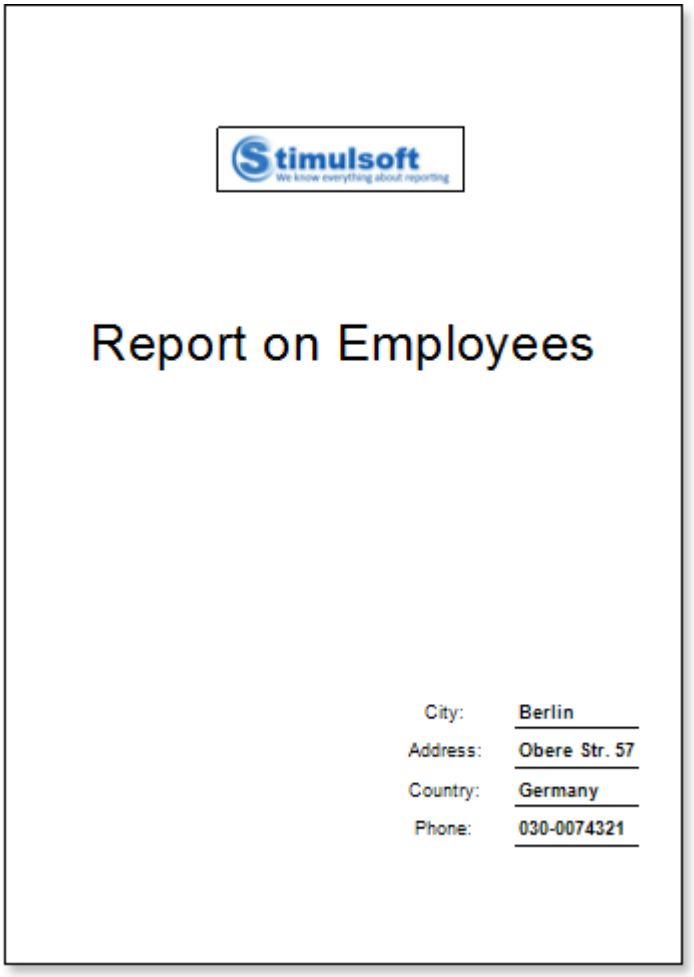
9.7. Enable **Borders** of the text component, if required;
9.8. Set the border color.




9. Click the **Preview** button or invoke the **Viewer**, pressing **F5** or clicking the **Preview** menu item. After rendering all references to data fields will be changed on data form specified fields. Data will be output in consecutive order from the database that was defined for this report. The amount of copies of the **DataBand** in the rendered report will be the same as the amount of data rows in the database.

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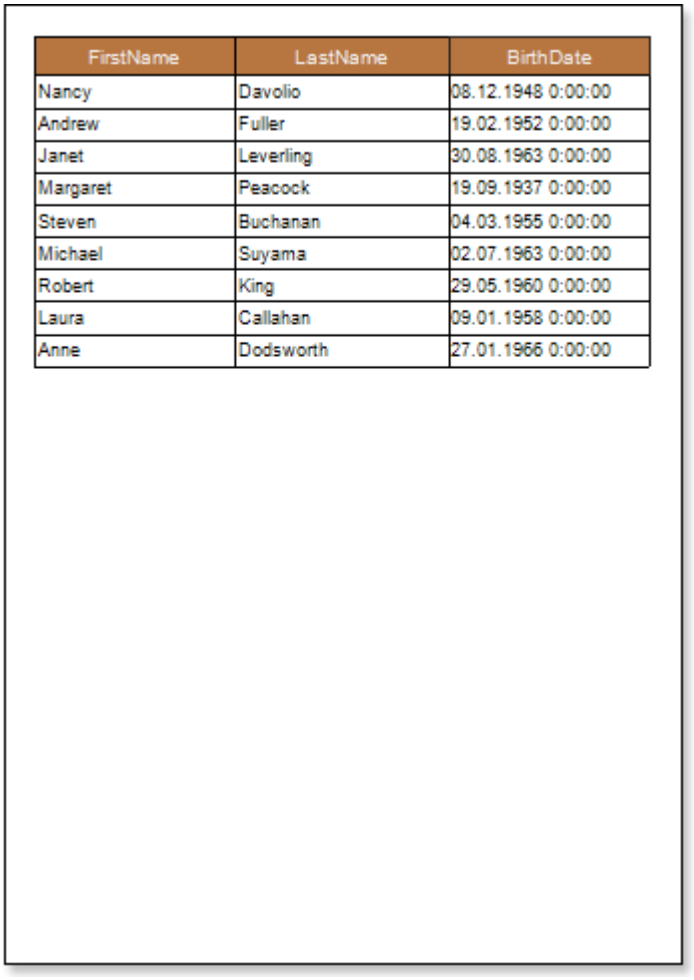

| FirstName | LastName | BirthDate |
|---|---|---|
| Nancy | Davolio | 08.12.1948 0:00:00 |
| Andrew | Fuller | 19.02.1952 0:00:00 |
| Janet | Leverling | 30.08.1963 0:00:00 |
| Margaret | Peacock | 19.09.1937 0:00:00 |
| Steven | Buchanan | 04.03.1955 0:00:00 |
| Michael | Suyama | 02.07.1963 0:00:00 |
| Robert | King | 29.05.1960 0:00:00 |
| Laura | Callahan | 09.01.1958 0:00:00 |
| Anne | Dodsworth | 27.01.1966 0:00:00 |

## Adding Styles

1. Go back to the report template;
2. Select **DataBand**;
3. Change values of **Even style** and **Odd style** properties. If values of these properties are not set, then select the **Edit Styles** in the list of values of these properties and, using **Style Designer**, create a new style. The picture below shows the **Style Designer**:

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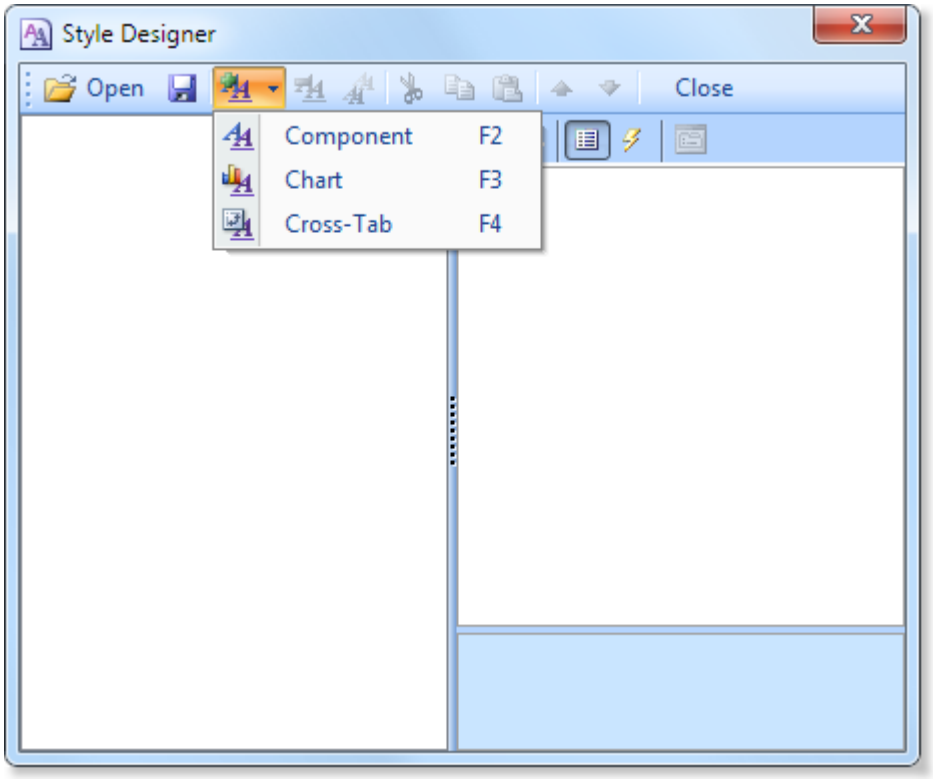


Click the **Add Style** button to start creating a style. Select **Component** from the drop down list. Set the **Brush.Color** property to change the background color of a row. The picture below shows a sample of the **Style Designer** with the list of values of the **Brush.Color** property:

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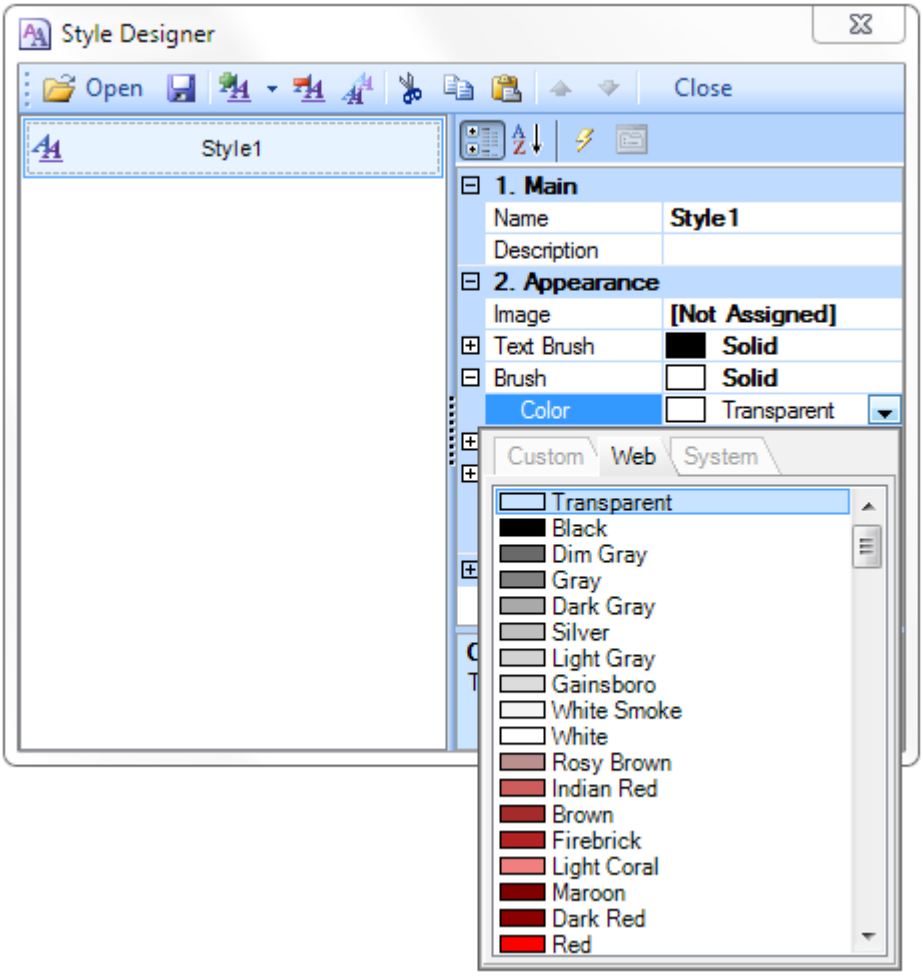


Click **Close**. Then a new value in the list of **Even style** and **Odd style** properties (a style of a list of odd and even rows) will appear.

4. To render the report, click the **Preview** button or invoke the **Viewer**, pressing **F5** or clicking the **Preview** menu item.

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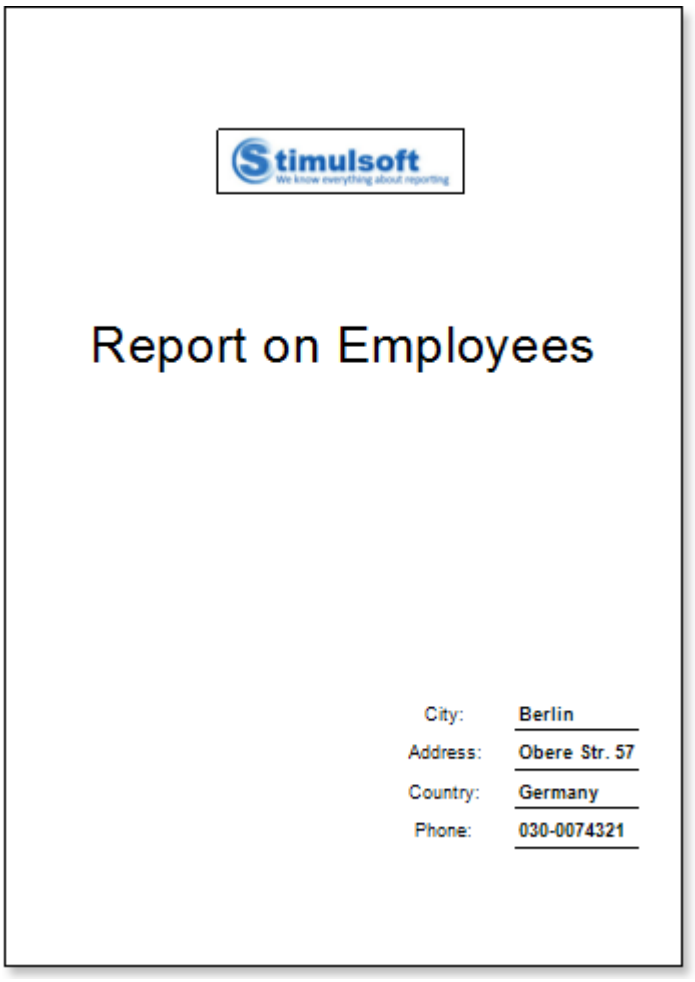


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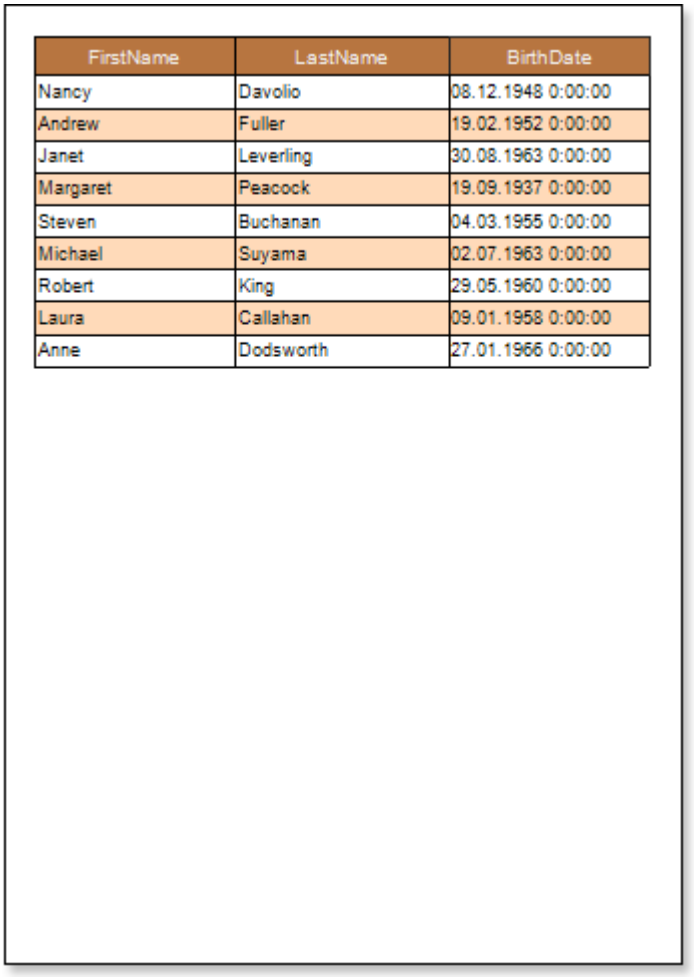

| FirstName | LastName | BirthDate |
|---|---|---|
| Nancy | Davolio | 08.12.1948 0:00:00 |
| Andrew | Fuller | 19.02.1952 0:00:00 |
| Janet | Leverling | 30.08.1963 0:00:00 |
| Margaret | Peacock | 19.09.1937 0:00:00 |
| Steven | Buchanan | 04.03.1955 0:00:00 |
| Michael | Suyama | 02.07.1963 0:00:00 |
| Robert | King | 29.05.1960 0:00:00 |
| Laura | Callahan | 09.01.1958 0:00:00 |
| Anne | Dodsworth | 27.01.1966 0:00:00 |

## 3.20. Report with Segmented Pages

If data in a report should be placed on a single page by width or height, and a page size is small, you can add the required number of segments by width and/or height. In this case, one segment is a whole page and summary page consists of several segments across by width or height. In order to design a report with segmented pages, follow the steps below:

1. Run the designer;
2. Connect the data:
    2.1. Create a **New Connection**;
    2.2. Create a **New Data Source**;

3. Define the number of segments by height and/or width. For example, set the **Segment per Height** property to **2**, i.e. the number of segments by height is **2**.
4. Put the **DataBand** on a segment of the report template.

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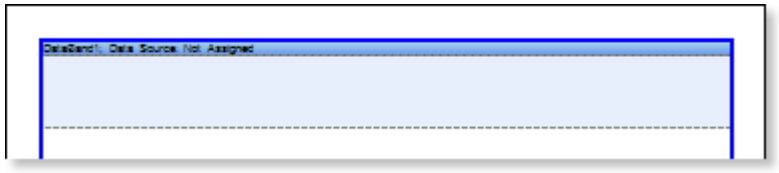
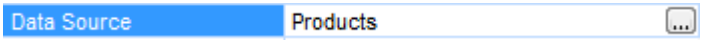
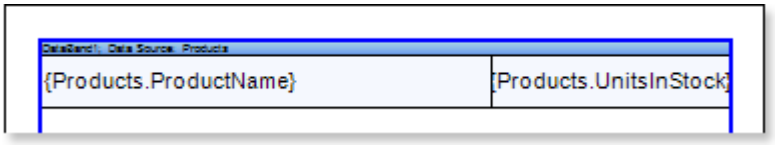


5. Edit **DataBand**:
   5.1. Align the **DataBand** by height;
   5.2. Change values of band properties. For example, set the **Can Break** property to **true**, if you wish the data band to be broken;
   5.3. Change the **DataBand** background;
   5.4. Enable **Borders** for the **DataBand**, if required;
   5.5. Change the border color.
6. Specify the data source in the **DataBand** using the **Data Source** property:




7. Put text components with expressions on **DataBands**. Where expression is a reference to the data field. For example, put two text components with the following expressions: **{Products.ProductName}** and **{Products.UnitsInStock}**;
8. Edit **Text** and **TextBox** component:
   8.1. Drag and drop the text component in **DataBands**;
   8.2. Change parameters of the text font: size, type, color;
   8.3. Align the text component by width and height;
   8.4. Change the background of the text component;
   8.5. Align text in the text component;
   8.6. Change the value of properties of the text component. For example, set the **Word Wrap** property to **true**, if you need a text to be wrapped;
   8.7. Enable **Borders** for the text component, if required.
   8.8. Change the border color.




9. Click the **Preview** button or invoke the **Viewer**, pressing **F5** or clicking the **Preview** menu item. After rendering all references to data fields will be changed on data form specified fields. Data will be output in consecutive order from the database that was defined for this report. The amount of copies of the **DataBand** in the rendered report will be the same as the amount of data rows in the database.

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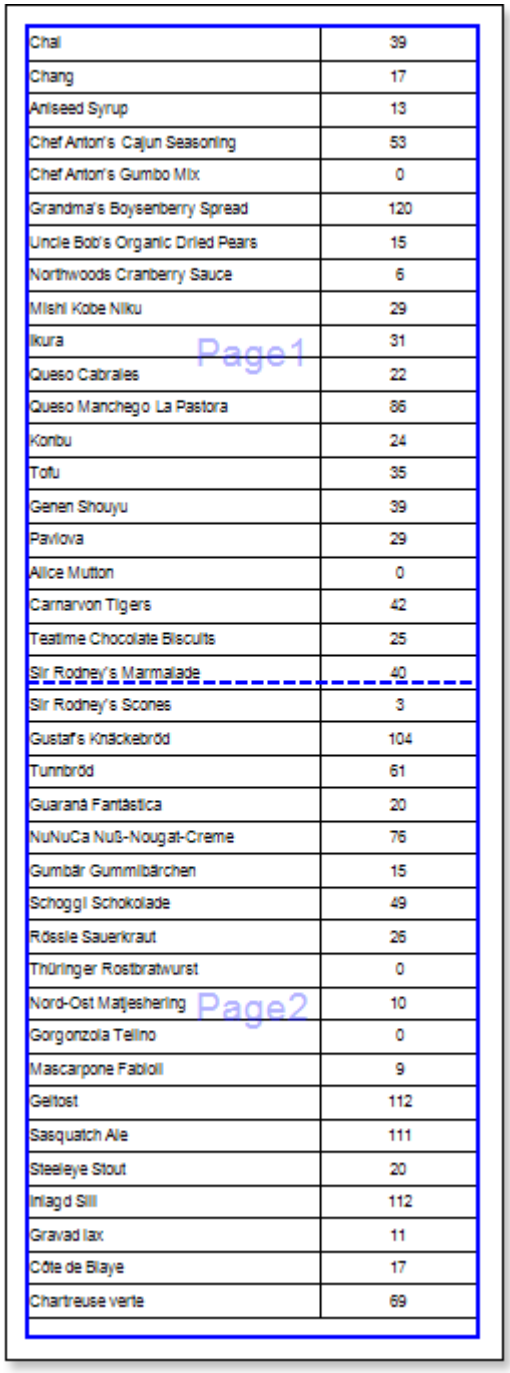

| | |
|---|---|
| Chai | 39 |
| Chang | 17 |
| Aniseed Syrup | 13 |
| Chef Anton's Cajun Seasoning | 53 |
| Chef Anton's Gumbo Mix | 0 |
| Grandma's Boysenberry Spread | 120 |
| Uncle Bob's Organic Dried Pears | 15 |
| Northwoods Cranberry Sauce | 6 |
| Mishi Kobe Niku | 29 |
| Ikura | 31 |
| Queso Cabrales | 22 |
| Queso Manchego La Pastora | 86 |
| Konbu | 24 |
| Tofu | 35 |
| Genen Shouyu | 39 |
| Pavlova | 29 |
| Alice Mutton | 0 |
| Carnarvon Tigers | 42 |
| Teatime Chocolate Biscuits | 25 |
| Sir Rodney's Marmalade | 40 |
| Sir Rodney's Scones | 3 |
| Gustaf's Knäckebröd | 104 |
| Tunnbröd | 61 |
| Guaraná Fantástica | 20 |
| NuNuCa Nuß-Nougat-Creme | 76 |
| Gumbär Gummibärchen | 15 |
| Schoggi Schokolade | 49 |
| Rössle Sauerkraut | 26 |
| Thüringer Rostbratwurst | 0 |
| Nord-Ost Matjeshering | 10 |
| Gorgonzola Telino | 0 |
| Mascarpone Fabioli | 9 |
| Geitost | 112 |
| Sasquatch Ale | 111 |
| Steeleye Stout | 20 |
| Inlagd Sill | 112 |
| Gravad lax | 11 |
| Côte de Blaye | 17 |
| Chartreuse verte | 69 |



10. Add other bands to the report template, for example, the **HeaderBand**;
11. Edit this bands:
    11.1. Align it by height;
    11.2. Change values of properties, if required;
    11.3. Change the background of bands;
    11.4. Enable **Borders**, if required;
    11.5. Set the border color.

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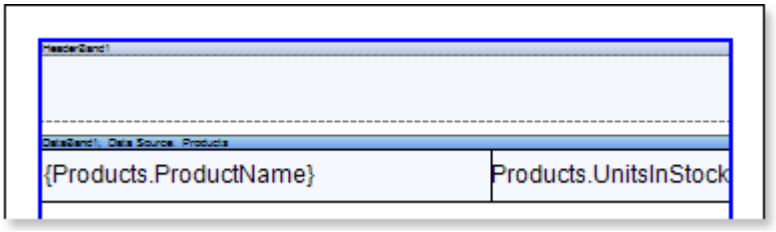
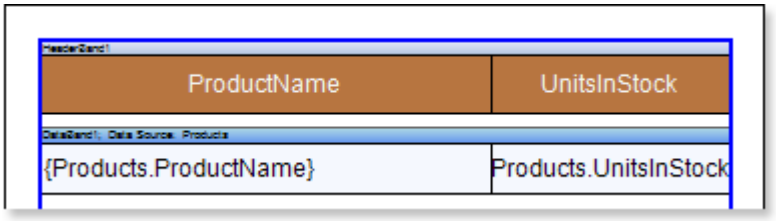



12. Put text components with expressions in the the band. The expression in the text component is a header in the **HeaderBand**.
13. Edit text and text component:
    13.1. Drag and drop the text component in the band;
    13.2. Change font options: size, type, color;
    13.3. Align text component by height and width;
    13.4. Change the background of the text component;
    13.5. Align text in the text component;
    13.6. Change values of text component properties, if required;
    13.7. Enable **Borders** of the text component, if required;
    13.8. Set the border color.




14. Click the **Preview** button or invoke the **Viewer**, pressing **F5** or clicking the **Preview** menu item .

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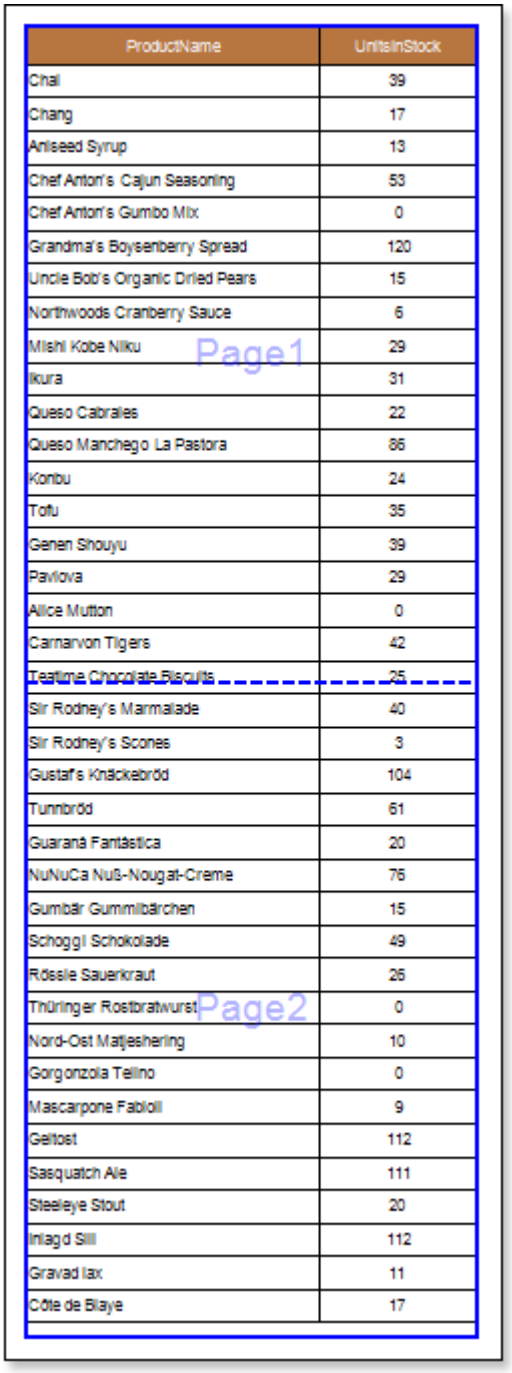

| ProductName | UnitsInStock |
|---|---|
| Chai | 39 |
| Chang | 17 |
| Aniseed Syrup | 13 |
| Chef Anton's Cajun Seasoning | 53 |
| Chef Anton's Gumbo Mix | 0 |
| Grandma's Boysenberry Spread | 120 |
| Uncle Bob's Organic Dried Pears | 15 |
| Northwoods Cranberry Sauce | 6 |
| Mishi Kobe Niku | 29 |
| Ikura | 31 |
| Queso Cabrales | 22 |
| Queso Manchego La Pastora | 86 |
| Konbu | 24 |
| Tofu | 35 |
| Genen Shouyu | 39 |
| Pavlova | 29 |
| Alice Mutton | 0 |
| Carnarvon Tigers | 42 |
| Teatime Chocolate Biscuits | 25 |
| Sir Rodney's Marmalade | 40 |
| Sir Rodney's Scones | 3 |
| Gustaf's Knäckebröd | 104 |
| Tunnbröd | 61 |
| Guaraná Fantástica | 20 |
| NuNuCa Nuß-Nougat-Creme | 76 |
| Gumbär Gummibärchen | 15 |
| Schoggi Schokolade | 49 |
| Rössle Sauerkraut | 26 |
| Thüringer Rostbratwurst | 0 |
| Nord-Ost Matjeshering | 10 |
| Gorgonzola Telino | 0 |
| Mascarpone Fabioli | 9 |
| Geitost | 112 |
| Sasquatch Ale | 111 |
| Steeleye Stout | 20 |
| Inlagd Sill | 112 |
| Gravad lax | 11 |
| Côte de Blaye | 17 |



## Adding Styles

1. Go back to the report template;
2. Select **DataBand**;
3. Change values of **Even style** and **Odd style** properties. If values of these properties are not set, then select the **Edit Styles** in the list of values of these properties and, using **Style Designer**, create a new style. The picture below shows the **Style Designer**:

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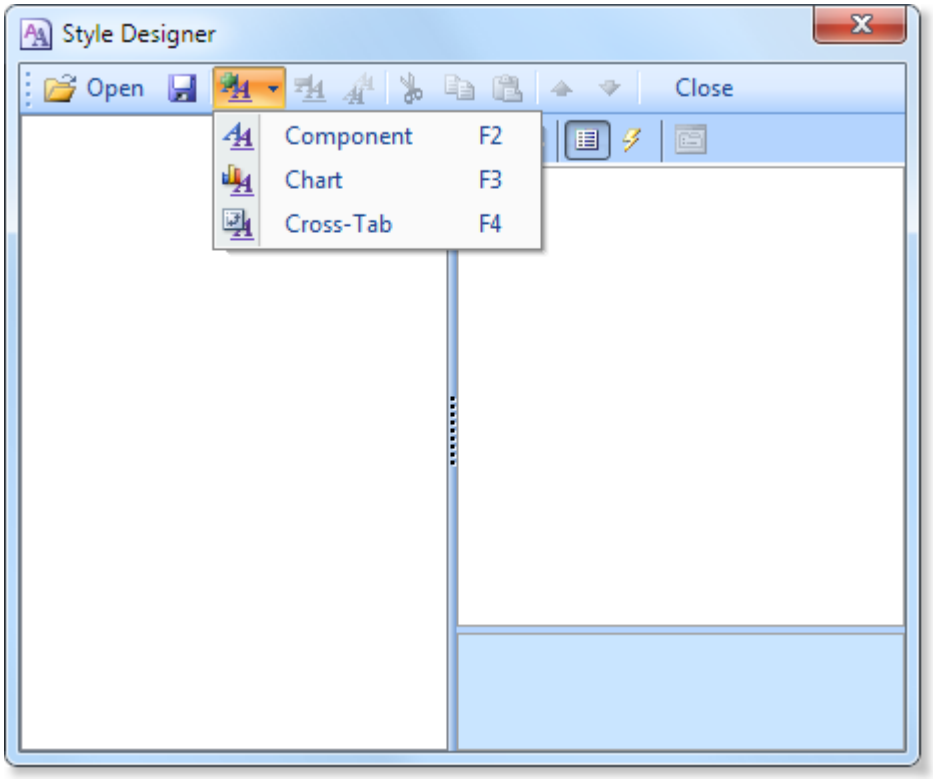


Click the **Add Style** button to start creating a style. Select **Component** from the drop down list. Set the **Brush.Color** property to change the background color of a row. The picture below shows a sample of the **Style Designer** with the list of values of the **Brush.Color** property:

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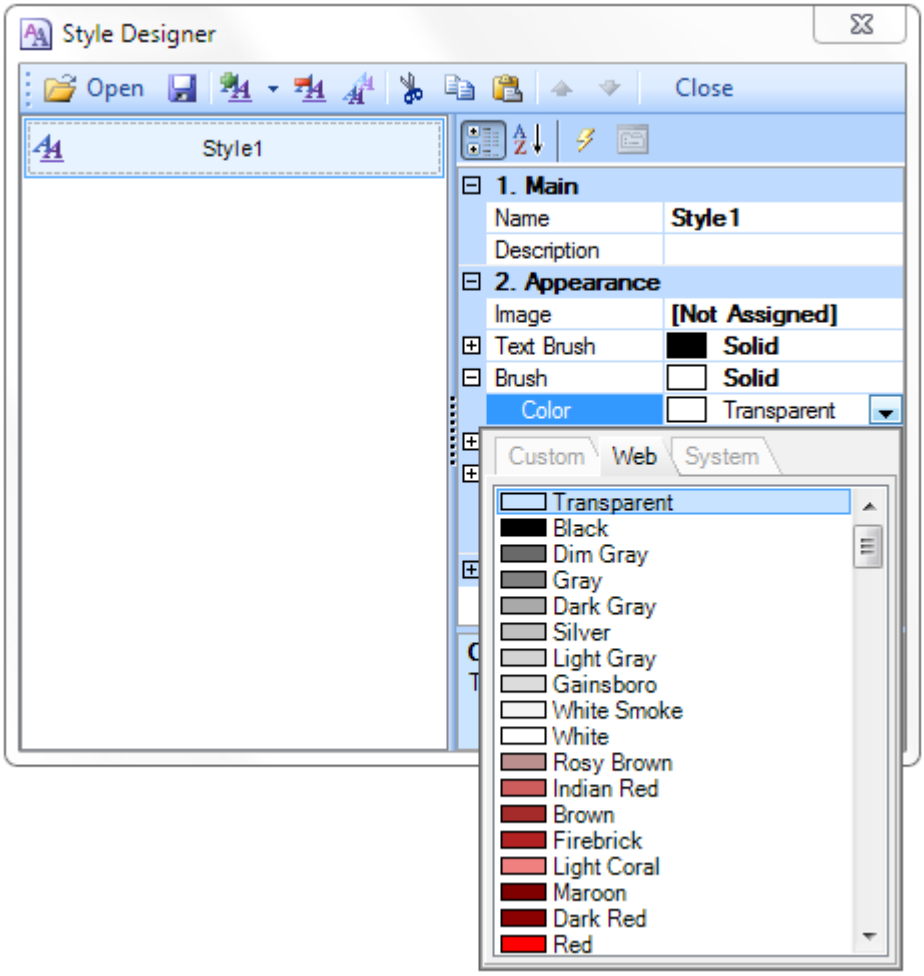


Click **Close**. Then a new value in the list of **Even style** and **Odd style** properties (a style of a list of odd and even rows) will appear.

4. To render the report, click the **Preview** button or invoke the **Viewer**, pressing **F5** or clicking the **Preview** menu item.

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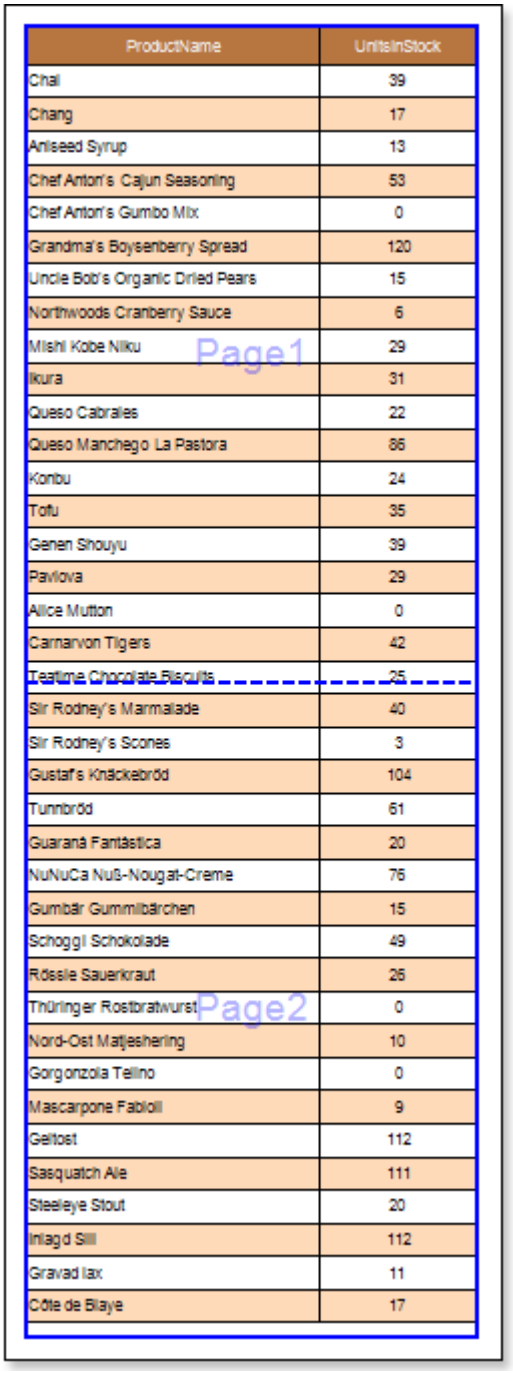

| ProductName | UnitsInStock |
|---|---|
| Chai | 39 |
| Chang | 17 |
| Aniseed Syrup | 13 |
| Chef Anton's Cajun Seasoning | 53 |
| Chef Anton's Gumbo Mix | 0 |
| Grandma's Boysenberry Spread | 120 |
| Uncle Bob's Organic Dried Pears | 15 |
| Northwoods Cranberry Sauce | 6 |
| Mishi Kobe Niku | 29 |
| Ikura | 31 |
| Queso Cabrales | 22 |
| Queso Manchego La Pastora | 86 |
| Konbu | 24 |
| Tofu | 35 |
| Genen Shouyu | 39 |
| Pavlova | 29 |
| Alice Mutton | 0 |
| Carnarvon Tigers | 42 |
| Teatime Chocolate Biscuits | 25 |
| Sir Rodney's Marmalade | 40 |
| Sir Rodney's Scones | 3 |
| Gustaf's Knäckebröd | 104 |
| Tunnbröd | 61 |
| Guaraná Fantástica | 20 |
| NuNuCa Nuß-Nougat-Creme | 76 |
| Gumbär Gummibärchen | 15 |
| Schoggi Schokolade | 49 |
| Rössle Sauerkraut | 26 |
| Thüringer Rostbratwurst | 0 |
| Nord-Ost Matjeshering | 10 |
| Gorgonzola Telino | 0 |
| Mascarpone Fabioli | 9 |
| Geitost | 112 |
| Sasquatch Ale | 111 |
| Steeleye Stout | 20 |
| Inlagd Sill | 112 |
| Gravad lax | 11 |
| Côte de Blaye | 17 |

Page1

Page2

## 3.21. Report with Primitives on Page

Primitives are: **Horizontal Line**, **Vertical Line**, **Rectangle** and **Rounded Rectangle**. Besides, you may use the **Shape** component. When placing a primitive on a page, the primitive will be rendered as a page item. In order to design a report with primitives on a page, follow the steps below

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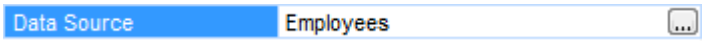
:

1. Run the designer;
2. Connect the data:
   2.1. Create a **New Connection**;
   2.2. Create a **New Data Source**;

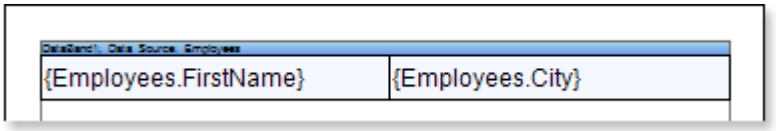
3. Put the **DataBand** on a page of a report template.

4. Edit **DataBand**:
   4.1. Align the **DataBand** by height;
   4.2. Change values of band properties. For example, set the **Can Shrink** property to **true**, if you wish the data band to be broken;
   4.3. Change the **DataBand** background;
   4.4. Enable **Borders** for the **DataBand**, if required;
   4.5. Change the border color.

5. Define the data source for the **DataBand** using the **Data Source** property:




6. Put text components with expressions on the **DataBand**. Where expression is a reference to the data field. For example, put two text components with expressions: **{Employees.FirstName}** and **{Employees.City}**;
7. Edit **Text** and **TextBox** component:
   7.1. Drag and drop the text component in the **DataBand**;
   7.2. Change parameters of the text font: size, type, color;
   7.3. Align the text component by width and height;
   7.4. Change the background of the text component;
   7.5. Align text in the text component;
   7.6. Change the value of properties of the text component. For example, set the **Word Wrap** property to **true**, if you need a text to be wrapped;
   7.7. Enable **Borders** for the text component, if required.
   7.8. Change the border color.




8. Click the **Preview** button or invoke the **Viewer**, pressing **F5** or clicking the **Preview** menu item.

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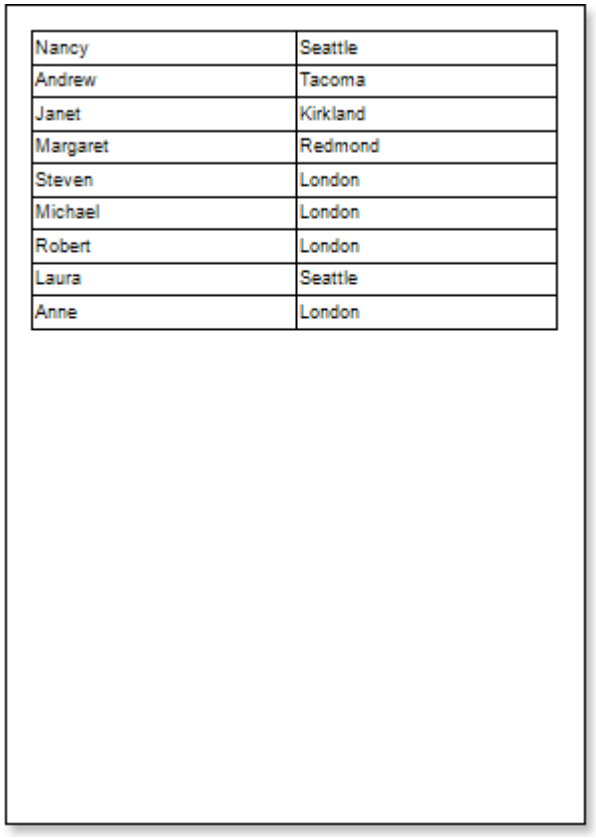

| | |
|---|---|
| Nancy | Seattle |
| Andrew | Tacoma |
| Janet | Kirkland |
| Margaret | Redmond |
| Steven | London |
| Michael | London |
| Robert | London |
| Laura | Seattle |
| Anne | London |

9. Go back to the report template.
10. Add the **Shape** component to a report template and edit it:
    10.1. Drag and drop the **Shape** component on the page;
    10.2. Change the type of a shape using the **Shape Type** property. Set the **Shape Type** property to **Complex Arrow**;
    10.3. Stretch the **Shape** component horizontally and vertically;
    10.4. Change the value of other properties. For example, set the **Grow to Height** property to **true**.

The picture below shows a report template with the **Shape** component placed on the report page:

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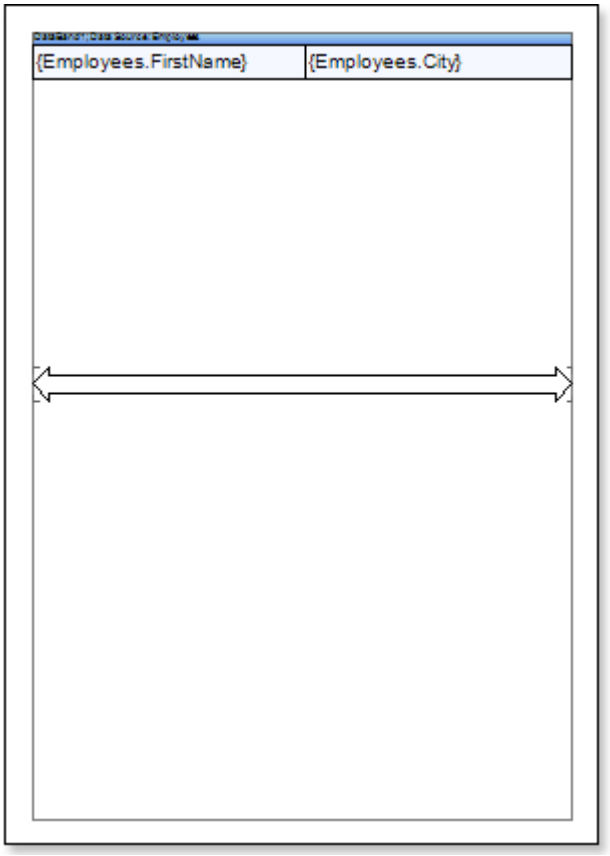


11. Click the **Preview** button or invoke the **Viewer**, pressing **F5** or clicking the **Preview** menu item .

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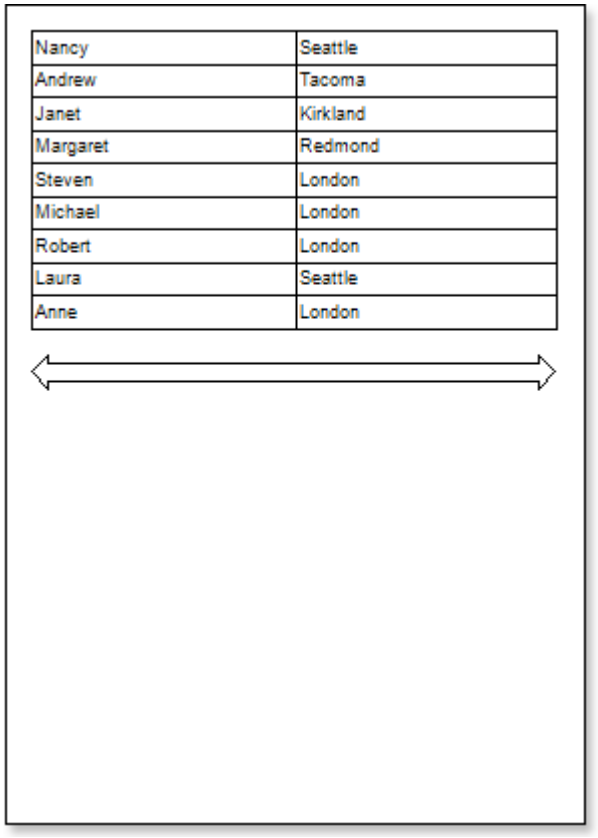


12. Go back to the report template.
13. If needed, add other bands to the report template, for example, **HeaderBand**;
14. Edit this bands:
    14.1. Align it by height;
    14.2. Change values of properties, if required;
    14.3. Change the background color of the band;
    14.4. Enable **Borders**, if required;
    14.5. Set the border color.

The picture below shows a report template with a **HeaderBand**:

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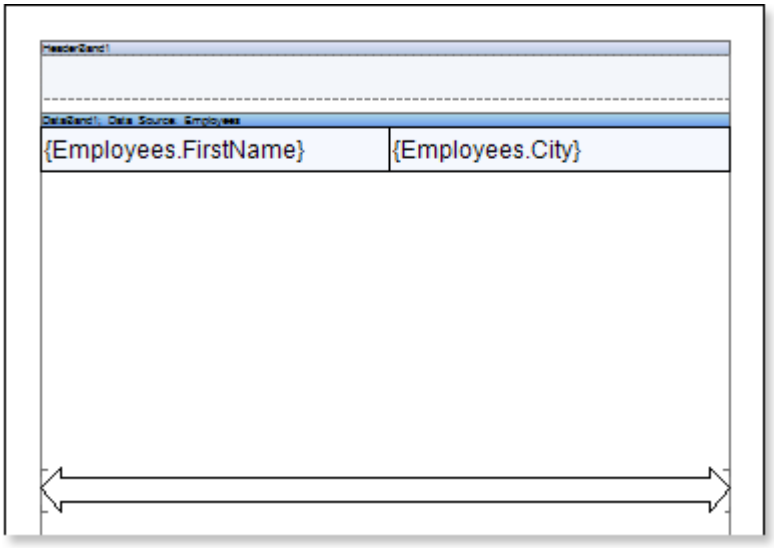
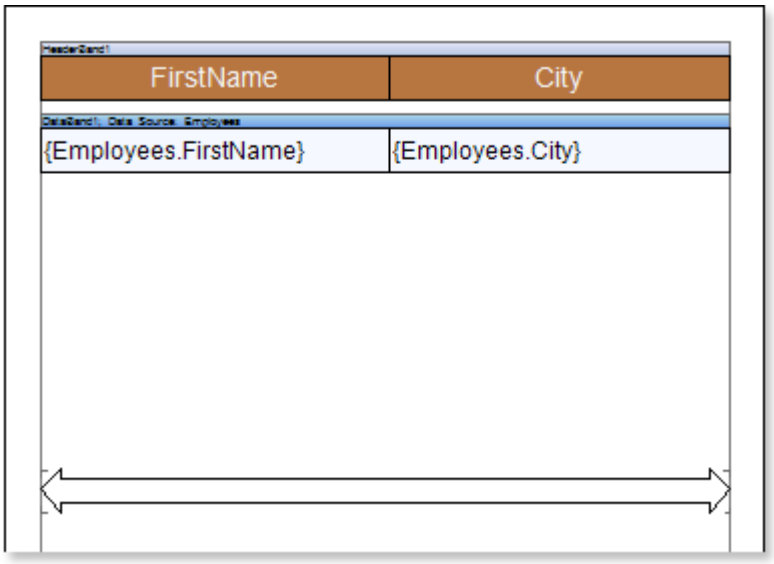



15. Put text components with expressions in the this band. The expression in the text component is a header in the **HeaderBand**.
16. Edit text and text components:
    16.1. Drag and drop the text component in the band;
    16.2. Change font options: size, type, color;
    16.3. Align text component by height and width;
    16.4. Change the background of the text component;
    16.5. Align text in the text component;
    16.6. Change values of text component properties, if required;
    16.7. Enable **Borders** of the text component, if required;
    16.8. Set the border color.




17. Click the **Preview** button or invoke the **Viewer**, pressing **F5** or clicking the **Preview** menu item . After rendering all references to data fields will be changed on data form specified fields. Data will be output in consecutive order from the database that was defined for this report. The amount of copies of the **DataBand** in the rendered report will be the same as the amount of data rows in the

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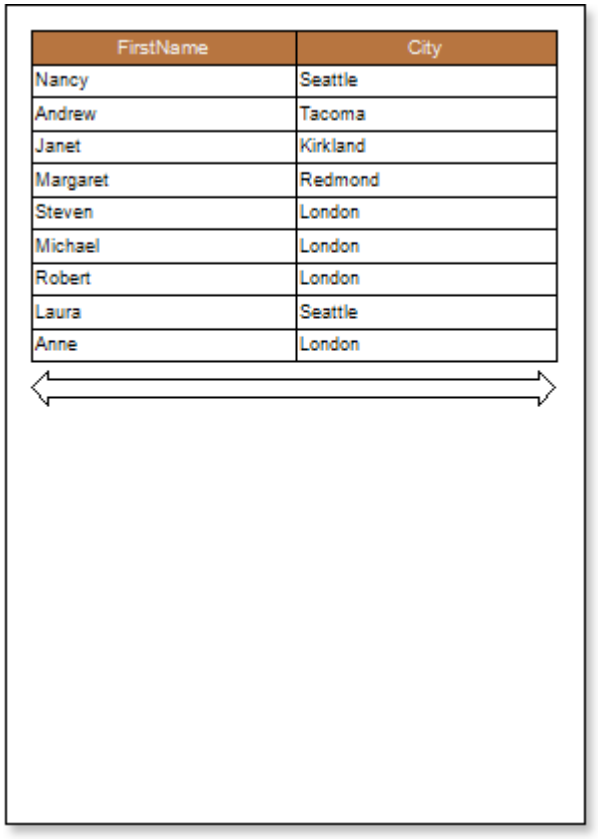
database.



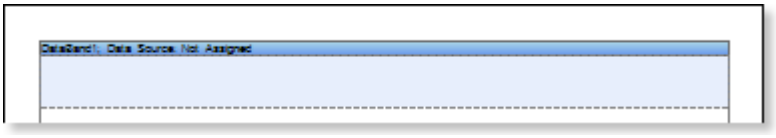
| FirstName | City |
|---|---|
| Nancy | Seattle |
| Andrew | Tacoma |
| Janet | Kirkland |
| Margaret | Redmond |
| Steven | London |
| Michael | London |
| Robert | London |
| Laura | Seattle |
| Anne | London |

## 3.22. Report with Primitives on Band

Primitives are: **Horizontal Line**, **Vertical Line**, **Rectangle** and **Rounded Rectangle**. Besides, you may use the **Shape** component. When placing a primitive on a band, the primitive will be rendered on a page as many times as the band will be printed. In order to design a report with primitives on a band, follow the steps below:

1. Run the designer;
2. Connect the data:
    2.1. Create a **New Connection**;
    2.2. Create a **New Data Source**;

3. Put the **DataBand** on a page of a report template.

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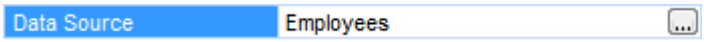
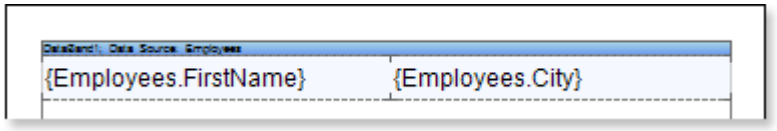
4. Edit **DataBand**:
   4.1. Align the **DataBand** by height;
   4.2. Change values of band properties. For example, set the **Can Shrink** property to **true**, if you wish the data band to be broken;
   4.3. Change the **DataBand** background;
   4.4. Enable **Borders** for the **DataBand**, if required;
   4.5. Change the border color.

5. Define the data source for the **DataBand** using the **Data Source** property:




6. Put text components with expressions on the **DataBand**. Where expression is a reference to the data field. For example, put two text components with expressions: **{Employees.FirstName}** and **{Employees.City}**;
7. Edit **Text** and **TextBox** component:
   7.1. Drag and drop the text component in the **DataBand**;
   7.2. Change parameters of the text font: size, type, color;
   7.3. Align the text component by width and height;
   7.4. Change the background of the text component;
   7.5. Align text in the text component;
   7.6. Change the value of properties of the text component. For example, set the **Word Wrap** property to **true**, if you need a text to be wrapped;
   7.7. Enable **Borders** for the text component, if required.
   7.8. Change the border color.




8. Click the **Preview** button or invoke the **Viewer**, pressing **F5** or clicking the **Preview** menu item.

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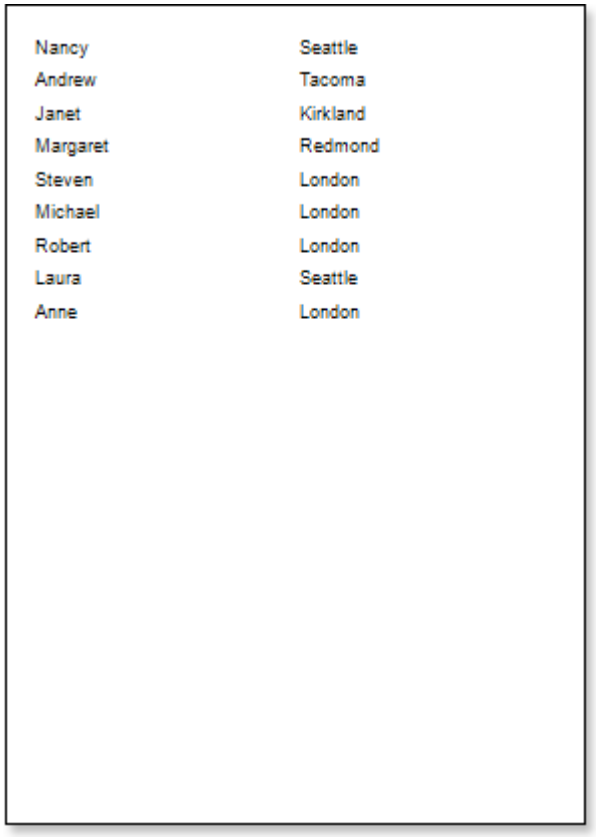
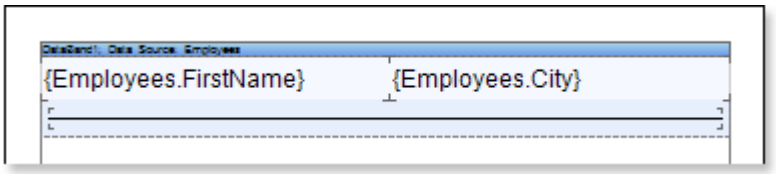



9. Go back to the report template.
10. Add the **Shape** component to a report template in the **DataBand** and edit it:
    10.1. Drag and drop the **Shape** component on the page;
    10.2. Change the type of a shape using the **Shape Type** property. Set the **Shape Type** property to **Complex Arrow**;
    10.3. Stretch the **Shape** component horizontally and vertically;
    10.4. Change the value of other properties. For example, set the **Grow to Height** property to **true**.

The picture below shows a report template with the **Shape** component placed on the report page:




11. Click the **Preview** button or invoke the **Viewer**, pressing **F5** or clicking the **Preview** menu item .

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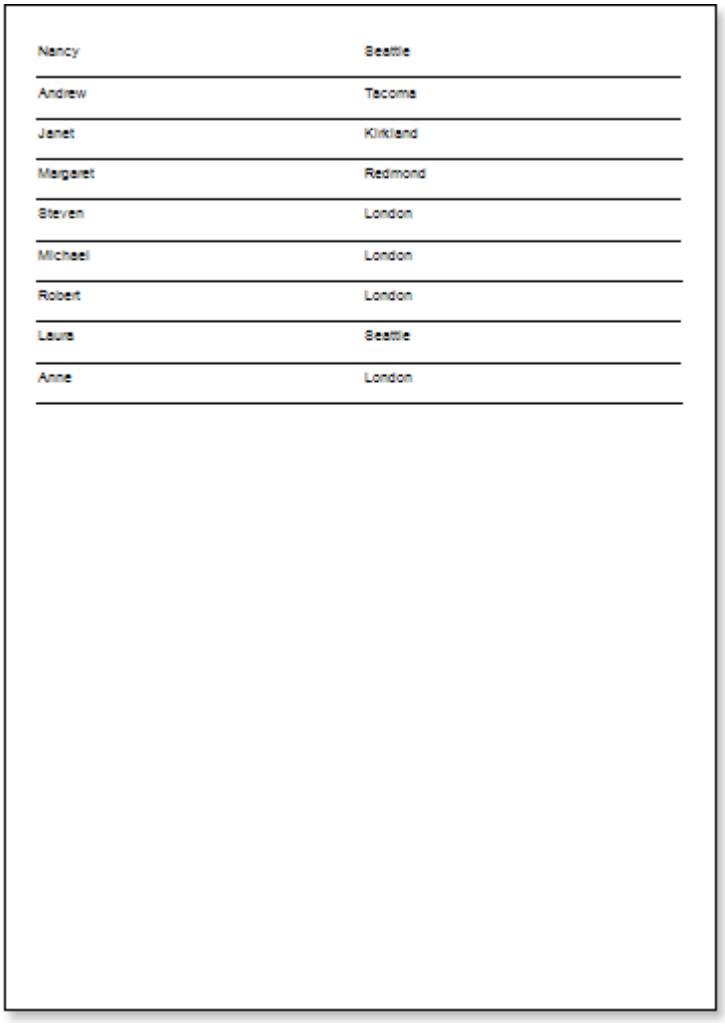
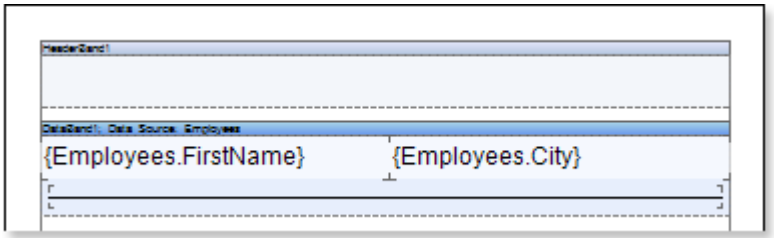


| | |
|---|---|
| Nancy | Seattle |
| Andrew | Tacoma |
| Janet | Kirkland |
| Margaret | Redmond |
| Steven | London |
| Michael | London |
| Robert | London |
| Laura | Seattle |
| Anne | London |

12. Go back to the report template.
13. If needed, add other bands to the report template, for example, **HeaderBand**;
14. Edit this bands:
    14.1. Align it by height;
    14.2. Change values of properties, if required;
    14.3. Change the background color of the band;
    14.4. Enable **Borders**, if required;
    14.5. Set the border color.

The picture below shows a report template with a **HeaderBand**:




15. Put text components with expressions in the this band. The expression in the text component is

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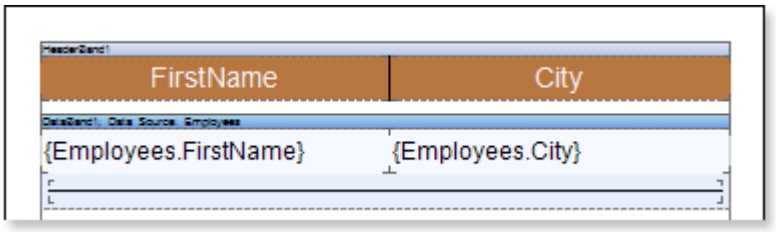
a header in the **HeaderBand**.

16. Edit text and text components:
    16.1. Drag and drop the text component in the band;
    16.2. Change font options: size, type, color;
    16.3. Align text component by height and width;
    16.4. Change the background of the text component;
    16.5. Align text in the text component;
    16.6. Change values of text component properties, if required;
    16.7. Enable **Borders** of the text component, if required;
    16.8. Set the border color.




17. Click the **Preview** button or invoke the **Viewer**, pressing **F5** or clicking the **Preview** menu item . After rendering all references to data fields will be changed on data form specified fields. Data will be output in consecutive order from the database that was defined for this report. The amount of copies of the **DataBand** in the rendered report will be the same as the amount of data rows in the database.

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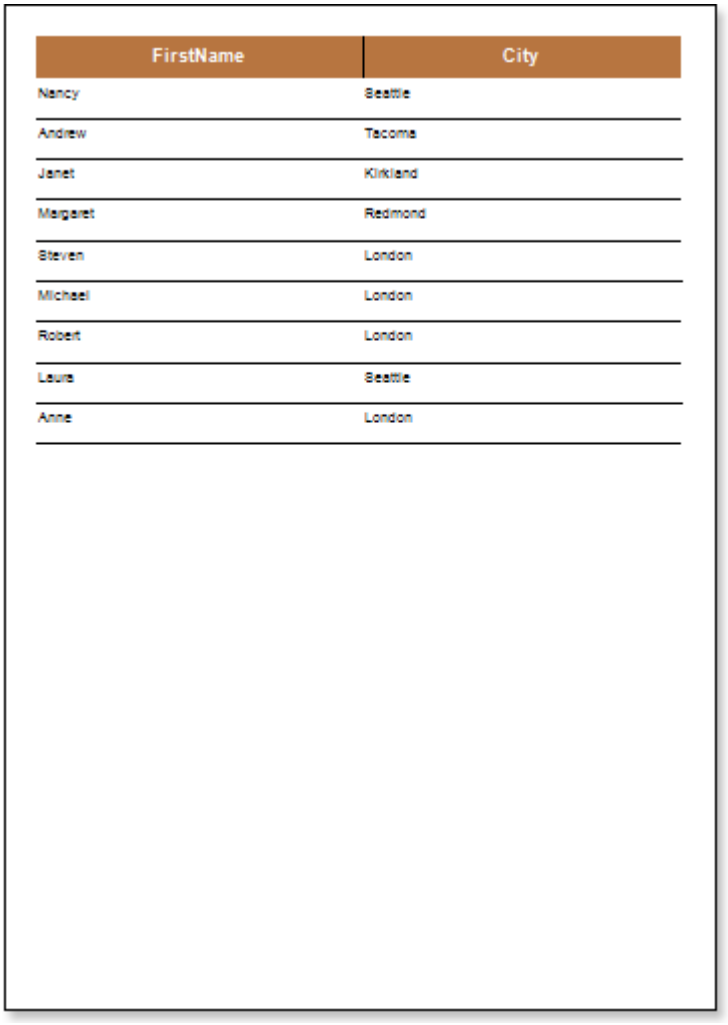

| FirstName | City |
|---|---|
| Nancy | Seattle |
| Andrew | Tacoma |
| Janet | Kirkland |
| Margaret | Redmond |
| Steven | London |
| Michael | London |
| Robert | London |
| Laura | Seattle |
| Anne | London |

## Adding Styles

1. Go back to the report template;
2. Select **DataBand**;
3. Change values of **Even style** and **Odd style** properties. If values of these properties are not set, then select the **Edit Styles** in the list of values of these properties and, using **Style Designer**, create a new style. The picture below shows the **Style Designer**:

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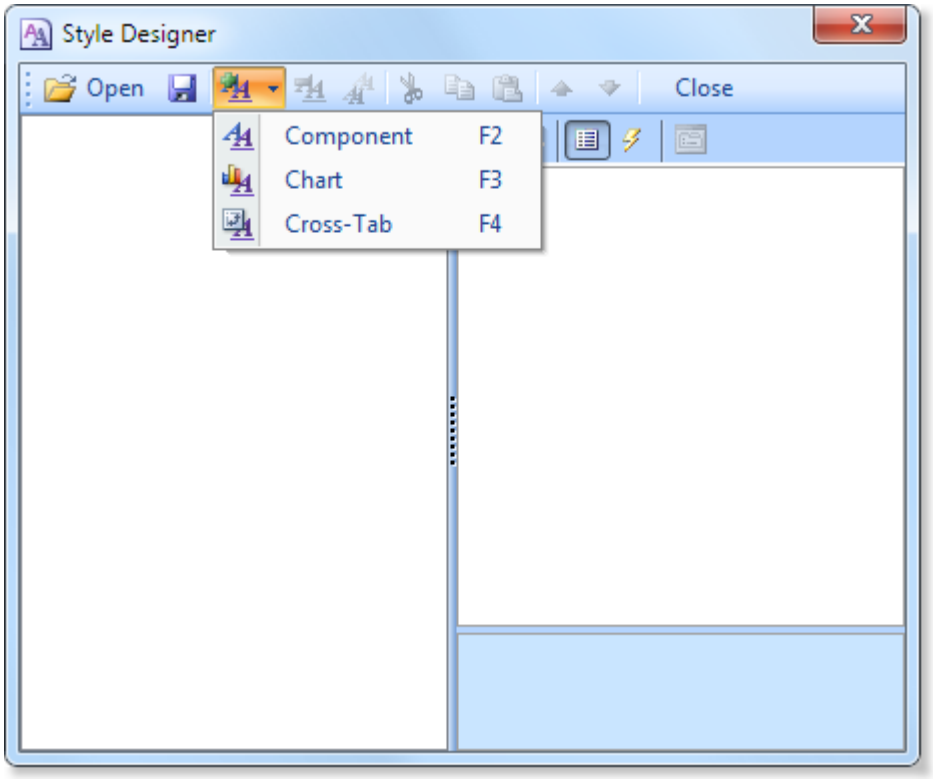


Click the **Add Style** button to start creating a style. Select **Component** from the drop down list. Set the **Brush.Color** property to change the background color of a row. The picture below shows a sample of the **Style Designer** with the list of values of the **Brush.Color** property:

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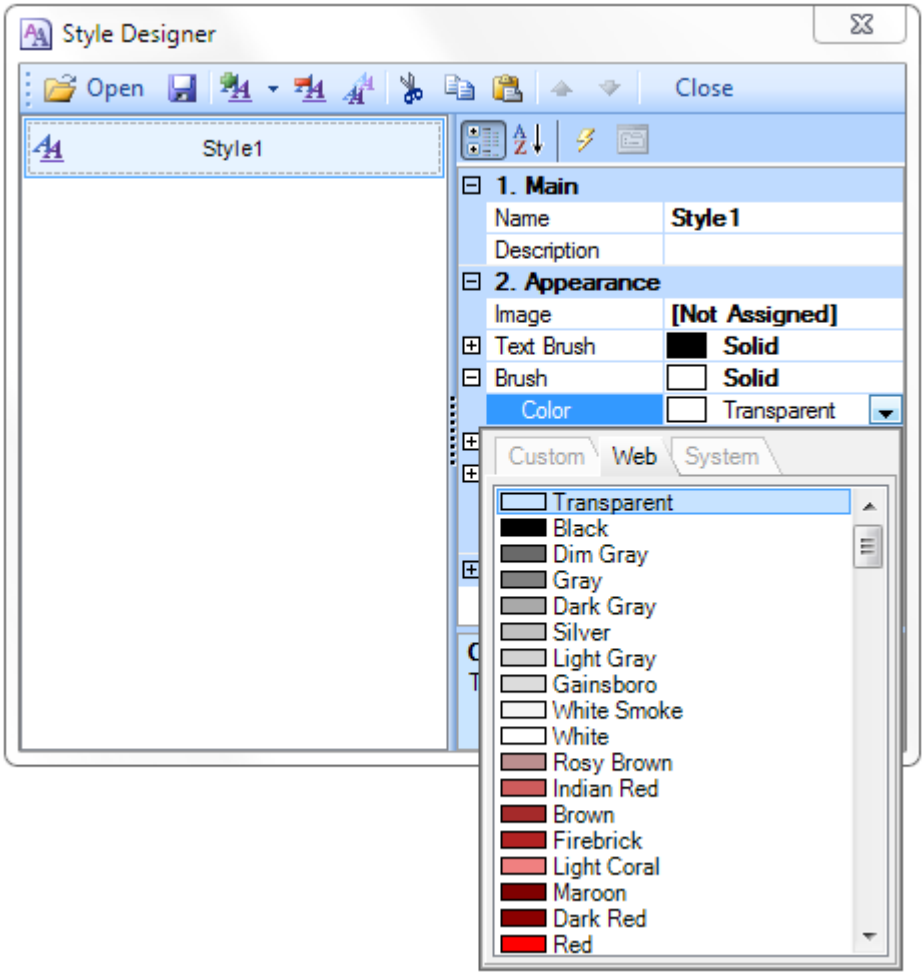


Click **Close**. Then a new value in the list of **Even style** and **Odd style** properties (a style of a list of odd and even rows) will appear.

4. To render the report, click the **Preview** button or invoke the **Viewer**, pressing **F5** or clicking the **Preview** menu item.

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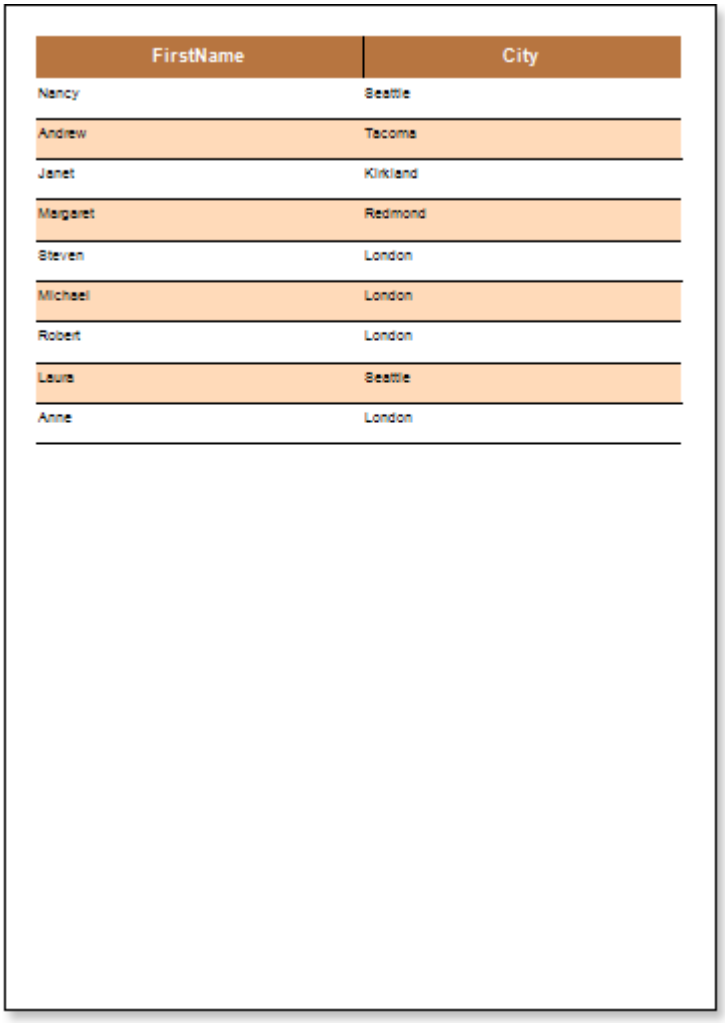

| FirstName | City |
|---|---|
| Nancy | Seattle |
| Andrew | Tacoma |
| Janet | Kirkland |
| Margaret | Redmond |
| Steven | London |
| Michael | London |
| Robert | London |
| Laura | Seattle |
| Anne | London |

## 3.23. Report with Cross-Primitives

Cross-primitives include: **Vertical Line**, **Rectangle** and **Rounded Rectangle**. The start and end points of cross-primitives can be placed on different components of a report. In order to design a report with cross-primitives, follow the steps below:

1. Run the designer;
2. Connect the data:
    2.1. Create a **New Connection**;
    2.2. Create a **New Data Source**;

3. Create a report or load previously saved one. For our example we take a Simple List Report report, described in **Simple List Report** article.

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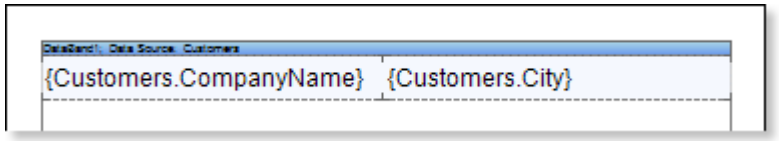
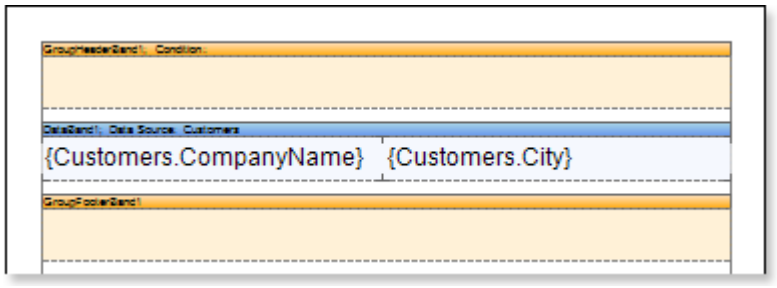
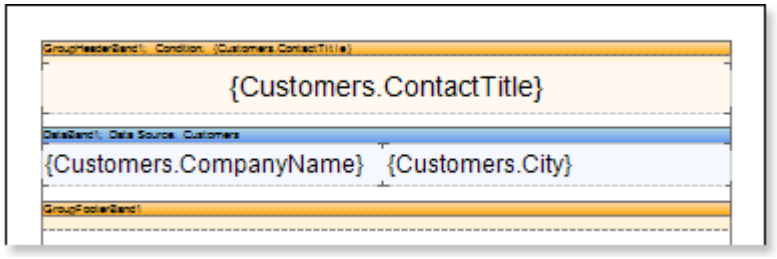



4. Add **GroupHeaderBand** and **GroupFooterBand** to a report template. The **GroupHeaderBand** should be placed above the **DataBand** to which it applies. The **GroupFooterBand** should be placed below the **DataBand**. And it is meant exactly the **DataBand**, that is associated with the **GroupHeaderBand**. Each **GroupFooterBand**, refers to a certain **GroupHeaderBand**. The **GroupFooterBand** will not be output without the **GroupHeaderBand**.




5. Edit the **GroupHeaderBand** and the **GroupFooterBand**:
   5.1. Align them by height;
   5.2. Change the values of the required properties. For example, set the **KeepGroupHeaderTogether** property for the **GroupHeaderBand** to **true**, if you want the **GroupHeaderBand** be kept with the group. And set the **KeepGroupFooterTogether** property for the **GroupFooterBand** to **true**, if you want this band be kept with the group;
   5.3. Set the background color for the **GroupHeaderBand**;
   5.4. If necessary, set the **Borders** for the **DataBand**;

6. Set the condition of data grouping in the report using the **Condition** property of the **GroupHeaderBand**. Condition for the grouping can be set by specifying an expression or by selecting a column from a data source. In this example, we specify the **{Customers.ContactTitle}** expression of the grouping condition, so, when rendering the report, a list of companies will be grouped by the **ContactTitle** column data.
7. Put a text component in the **GroupHeaderBand** with the following expression: **{Customers. ContactTitle}**. So when rendering the report, as a group header, the entries from the **ContactTitle** data column will be output. Put a text component in the **GroupFooterBand** with the following expression: **{Count ()}**. The **{Count ()}** function will count the number of entries in each group.




8. Edit expressions, and text components:
   8.1. Drag and drop text components in the **GroupHeaderBand** and **GroupFooterBand**;

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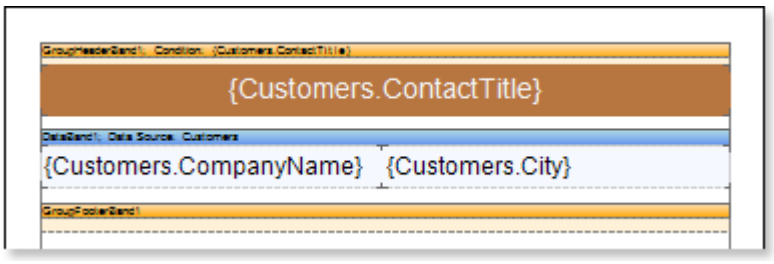
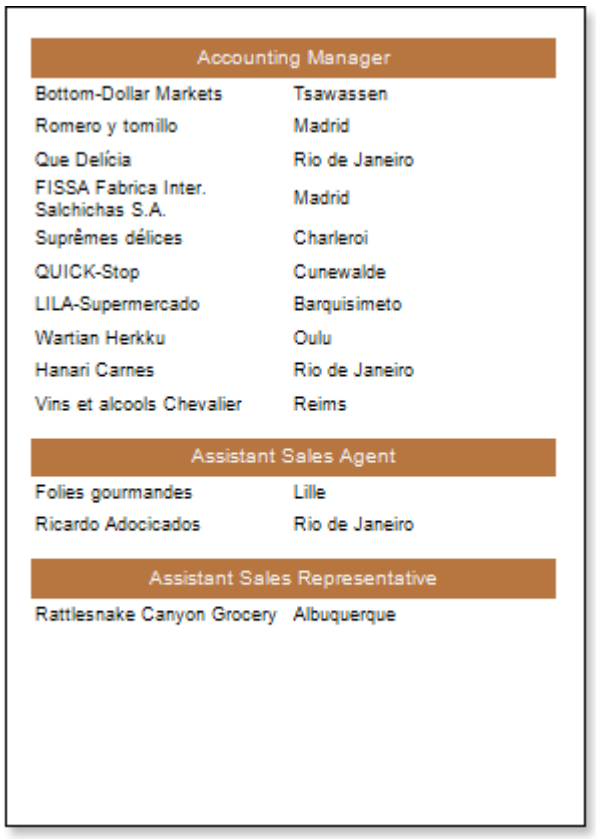
8.2. Set the font settings: size, style, color;
8.3. Align text components by height and width;
8.4. Set background color of text components;
8.5. Set the expression in the text components;
8.6. Set the value of the required properties;
8.7. Set **Borders** of text components, if required;
8.8. Set the border color.




9. Click the **Preview** button or invoke the **Viewer**, pressing **F5** or clicking the **Preview** menu item. After rendering a report all references to data fields will be changed on data from specified fields.




10. Go back to the report template;
11. Add the **Rectangle** cross-primitive to the report template. Starting points of the rectangle will lie in the **GroupHeaderBand**, and the end point will lie in the **GroupFooterBand**.

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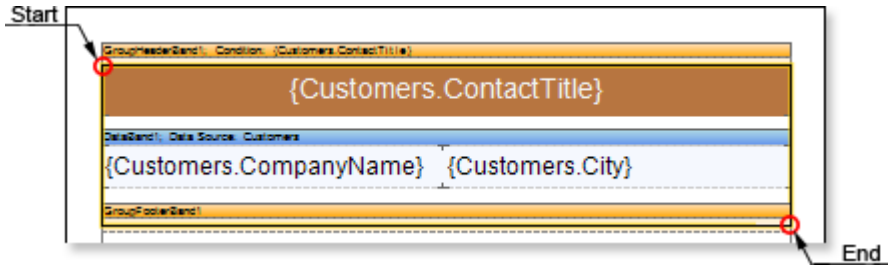
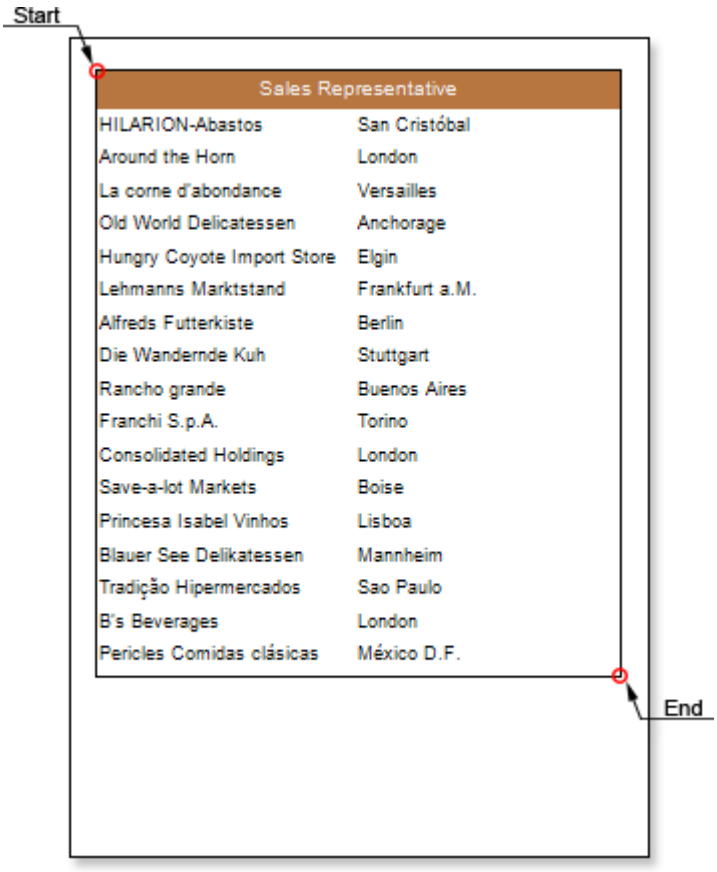



12. Click the **Preview** button or invoke the **Viewer**, pressing **F5** or clicking the **Preview** menu item . After rendering a report all references to data fields will be changed on data from specified fields. The picture below shows a rendered report page with grouping and the rendered **Rectangle** cross-primitive:




## Adding Styles

1. Go back to the report template;
2. Select **DataBand**;
3. Change values of **Even style** and **Odd style** properties. If values of these properties are not set, then select the **Edit Styles** in the list of values of these properties and, using **Style Designer**, create a new style. The picture below shows the **Style Designer**:

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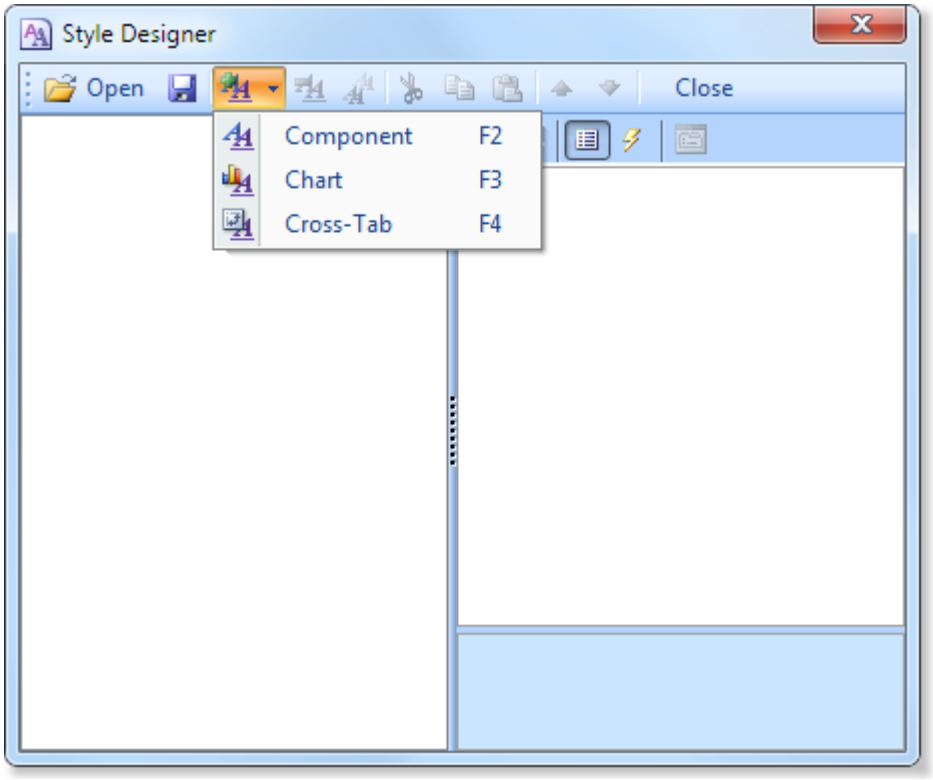


Click the **Add Style** button to start creating a style. Select **Component** from the drop down list. Set the **Brush.Color** property to change the background color of a row. The picture below shows a sample of the **Style Designer** with the list of values of the **Brush.Color** property:

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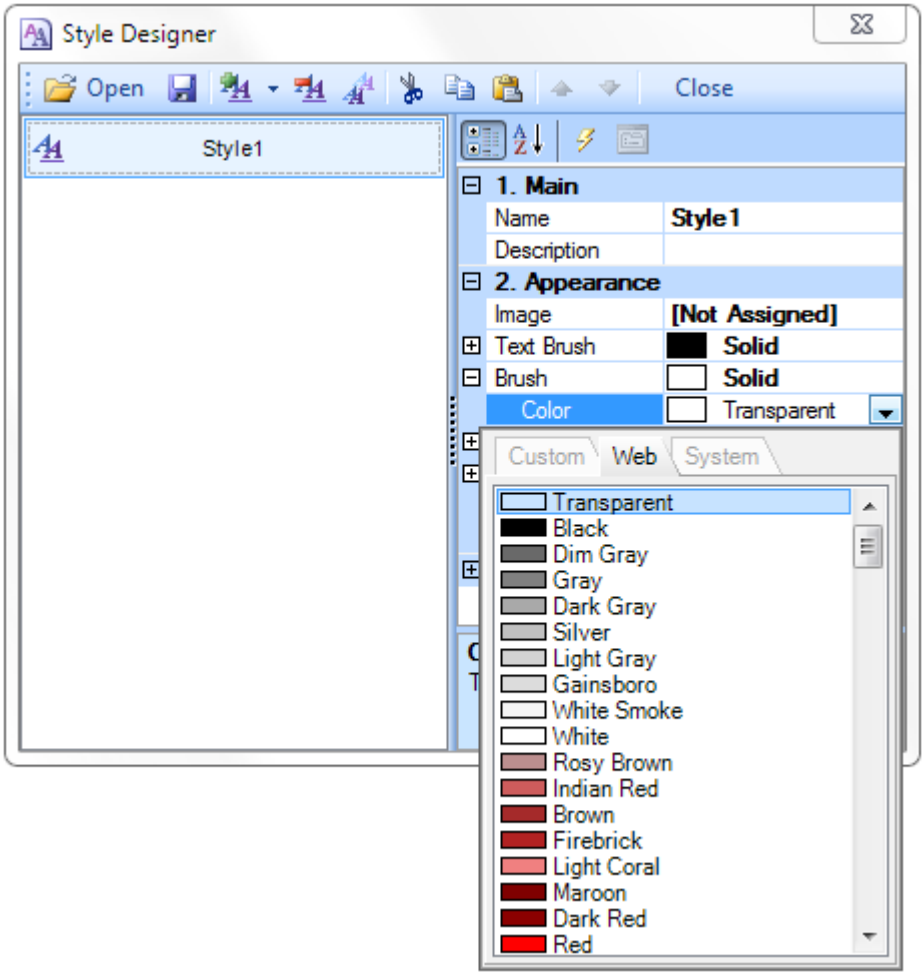


Click **Close**. Then a new value in the list of **Even style** and **Odd style** properties (a style of a list of odd and even rows) will appear.

4. To render the report, click the **Preview** button or invoke the **Viewer**, pressing **F5** or clicking the **Preview** menu item.

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| Sales Representative | |
|---|---|
| HILARION-Abastos | San Cristóbal |
| Around the Horn | London |
| La corne d'abondance | Versailles |
| Old World Delicatessen | Anchorage |
| Hungry Coyote Import Store | Elgin |
| Lehmanns Marktstand | Frankfurt a.M. |
| Alfreds Futterkiste | Berlin |
| Die Wandernde Kuh | Stuttgart |
| Rancho grande | Buenos Aires |
| Franchi S.p.A. | Torino |
| Consolidated Holdings | London |
| Save-a-lot Markets | Boise |
| Princesa Isabel Vinhos | Lisboa |
| Blauer See Delikatessen | Mannheim |
| Tradição Hipermercados | Sao Paulo |
| B's Beverages | London |
| Pericles Comidas clásicas | México D.F. |

## 3.24. Drill -Down Report

A Drill-Down report is an interactive report in what blocks can collapse/expand its content by clicking on the block title. Follow the steps below to create a report with dynamic folding in the preview window:

1. Run the designer;
2. Connect the data:
    2.1. Create a **New Connection**;
    2.2. Create a **New Data Source**;

3. Design a report or load already created one. For example, take a group report, which was reviewed in the "**Report with Grouping**". The picture below shows a report template with groups:

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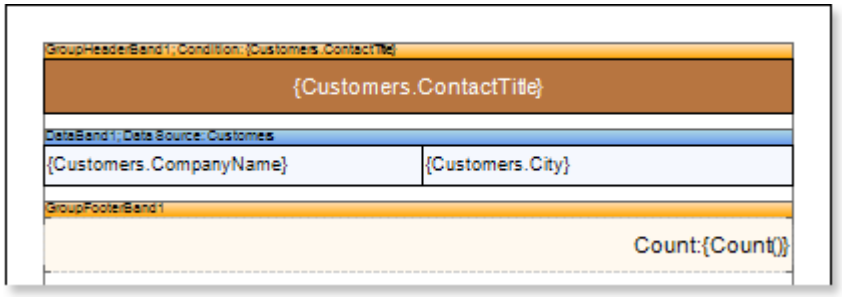
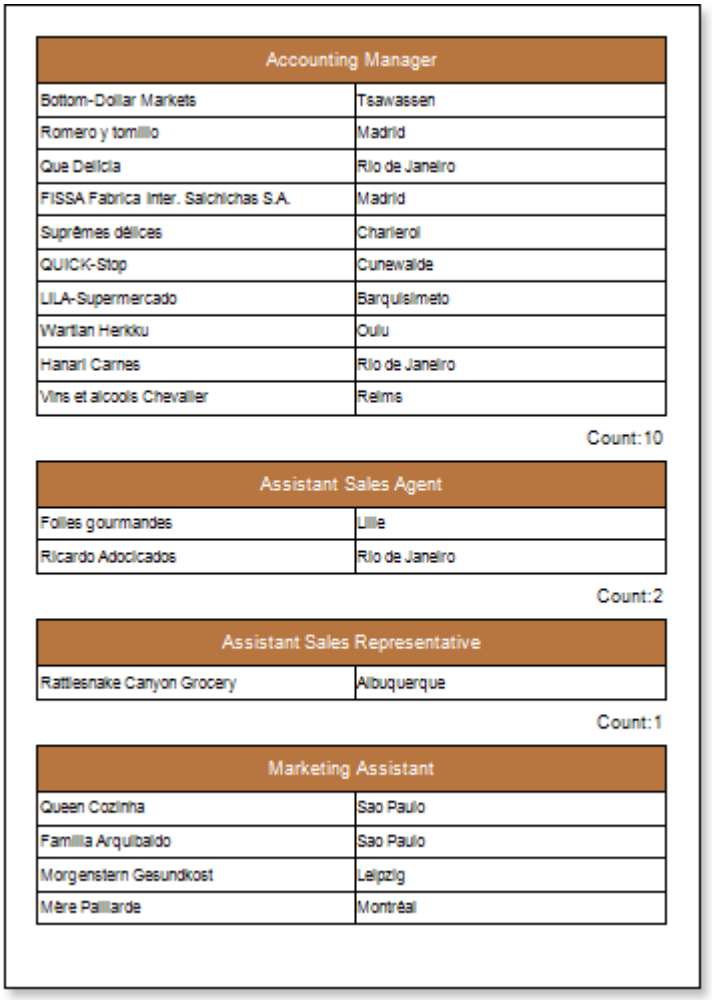



4. Click the **Preview** button or invoke the **Viewer**, pressing **F5** or clicking the **Preview** menu item. After rendering a report all references to data fields will be changed on data from specified fields.



| Accounting Manager | |
|---|---|
| Bottom-Dollar Markets | Tsawassen |
| Romero y tomillo | Madrid |
| Que Delícia | Rio de Janeiro |
| FISSA Fabrica Inter. Salchichas S.A. | Madrid |
| Suprêmes délices | Charleroi |
| QUICK-Stop | Cunewalde |
| LILA-Supermercado | Barquisimeto |
| Wartian Herkku | Oulu |
| Hanari Carnes | Rio de Janeiro |
| Vins et alcools Chevalier | Reims |

Count:10

| Assistant Sales Agent | |
|---|---|
| Folies gourmandes | Lille |
| Ricardo Adocicados | Rio de Janeiro |

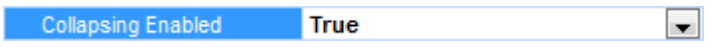
Count:2

| Assistant Sales Representative | |
|---|---|
| Rattlesnake Canyon Grocery | Albuquerque |

Count:1

| Marketing Assistant | |
|---|---|
| Queen Cozinha | Sao Paulo |
| Familia Arquibaldo | Sao Paulo |
| Morgenstern Gesundkost | Leipzig |
| Mère Paillarde | Montréal |

5. Go back to the report template.
6. Select the **GroupHeaderBand.**
7. Set the **Interaction.Collapsing Enabled** property to **true.**

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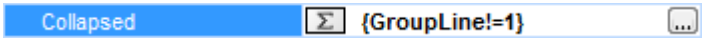
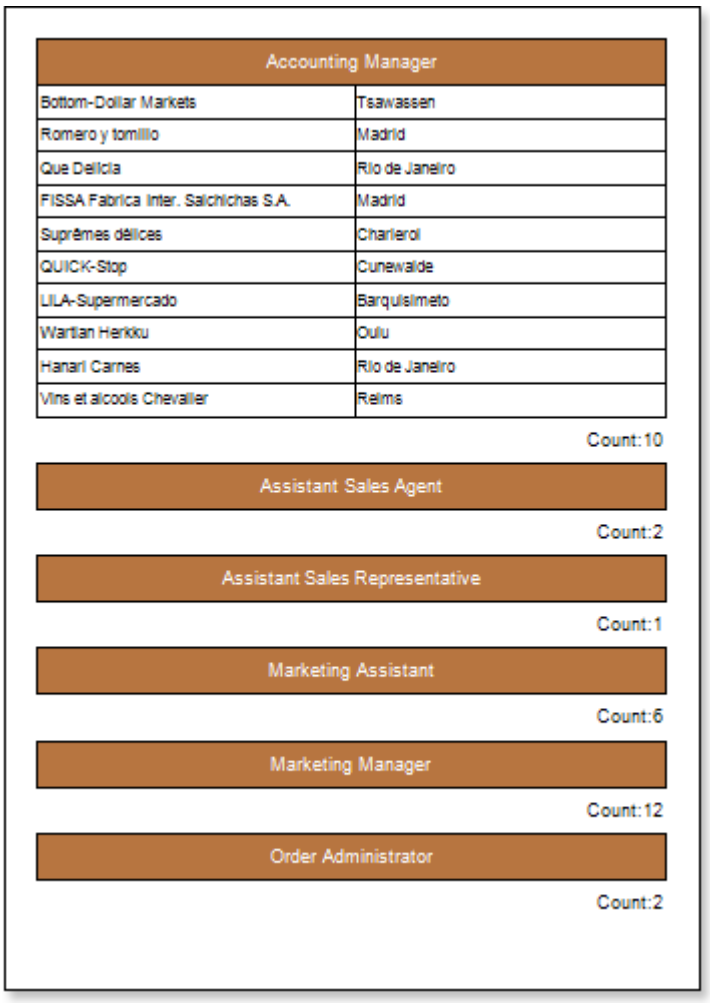
8. Change the value of the **Interaction.Collapsed** property. In our case, set the **Interaction. Collapsed** property to **{GroupLine! = 1}**. So, when rendering a report all the groups except the first one will be collapsed.




9. Click the **Preview** button or invoke the **Viewer**, pressing **F5** or clicking the **Preview** menu item. After rendering a report all references to data fields will be changed on data from specified fields.




To expand or collapse a group you should click on the **GroupHeaderBand** in the rendered report. If it is necessary for the group be collapsed together with the group summary, the **Interaction. CollapseGroupFooter** property should be set to **true**. The picture below shows the report page rendered with the collapsed report:

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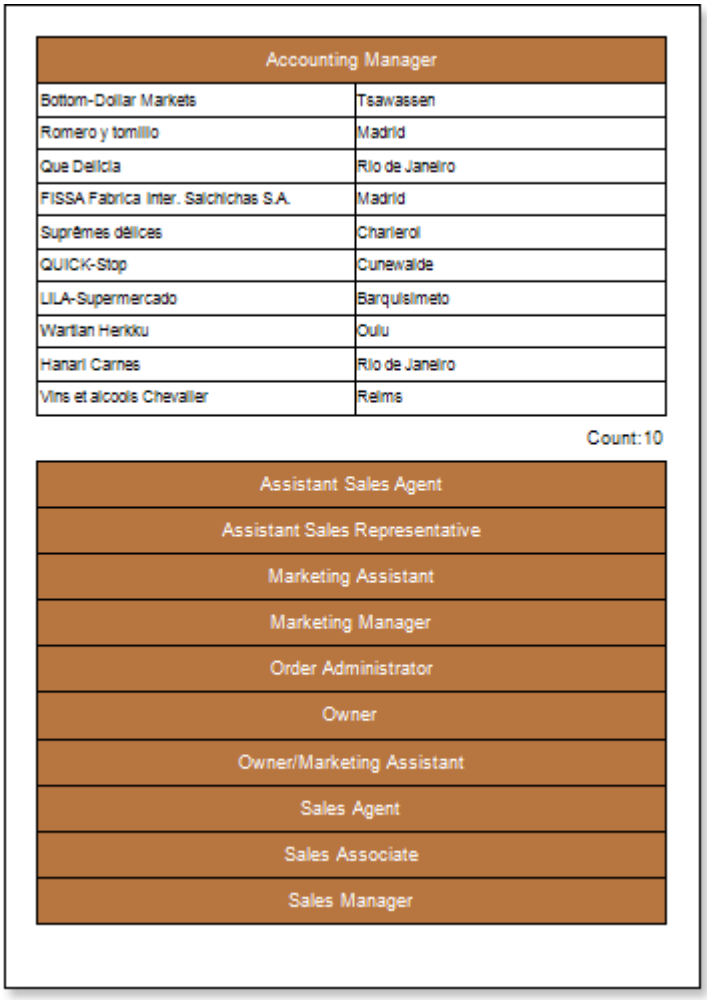

| Accounting Manager | |
|---|---|
| Bottom-Dollar Markets | Tsawassen |
| Romero y tomillo | Madrid |
| Que Delícia | Rio de Janeiro |
| FISSA Fabrica Inter. Salchichas S.A. | Madrid |
| Suprêmes délices | Charleroi |
| QUICK-Stop | Cunewalde |
| LILA-Supermercado | Barquisimeto |
| Wartian Herkku | Oulu |
| Hanari Carnes | Rio de Janeiro |
| Vins et alcools Chevalier | Reims |

Count: 10

| Assistant Sales Agent |
|---|
| Assistant Sales Representative |
| Marketing Assistant |
| Marketing Manager |
| Order Administrator |
| Owner |
| Owner/Marketing Assistant |
| Sales Agent |
| Sales Associate |
| Sales Manager |

## Adding Styles

1. Go back to the report template;
2. Select **DataBand**;
3. Change values of **Even style** and **Odd style** properties. If values of these properties are not set, then select the **Edit Styles** in the list of values of these properties and, using **Style Designer**, create a new style. The picture below shows the **Style Designer**:

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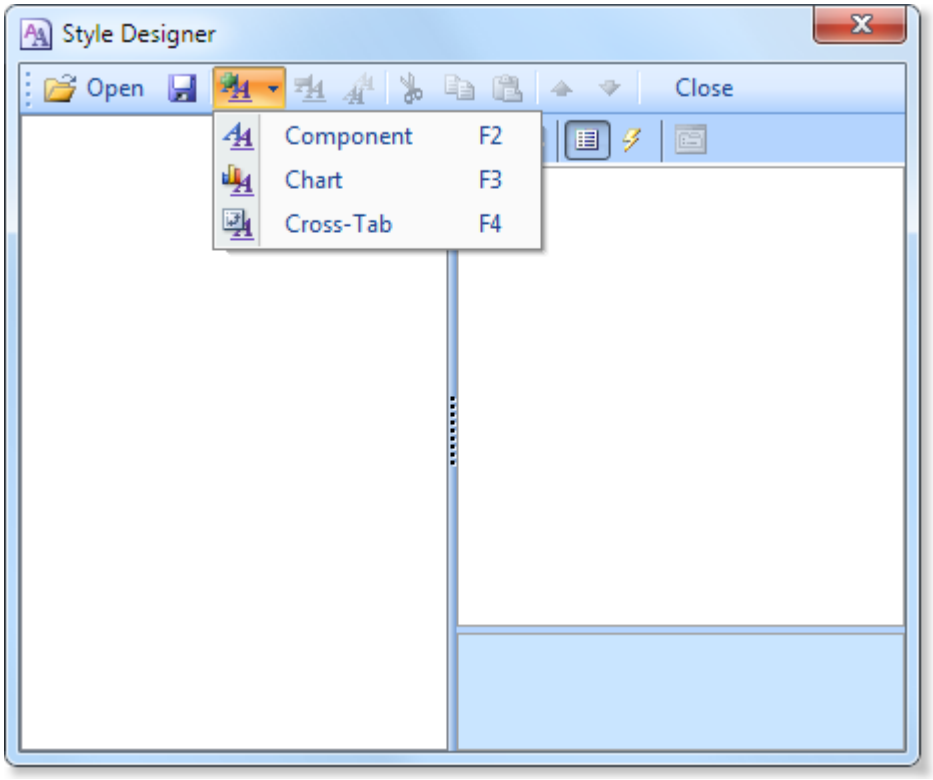


Click the **Add Style** button to start creating a style. Select **Component** from the drop down list. Set the **Brush.Color** property to change the background color of a row. The picture below shows a sample of the **Style Designer** with the list of values of the **Brush.Color** property:

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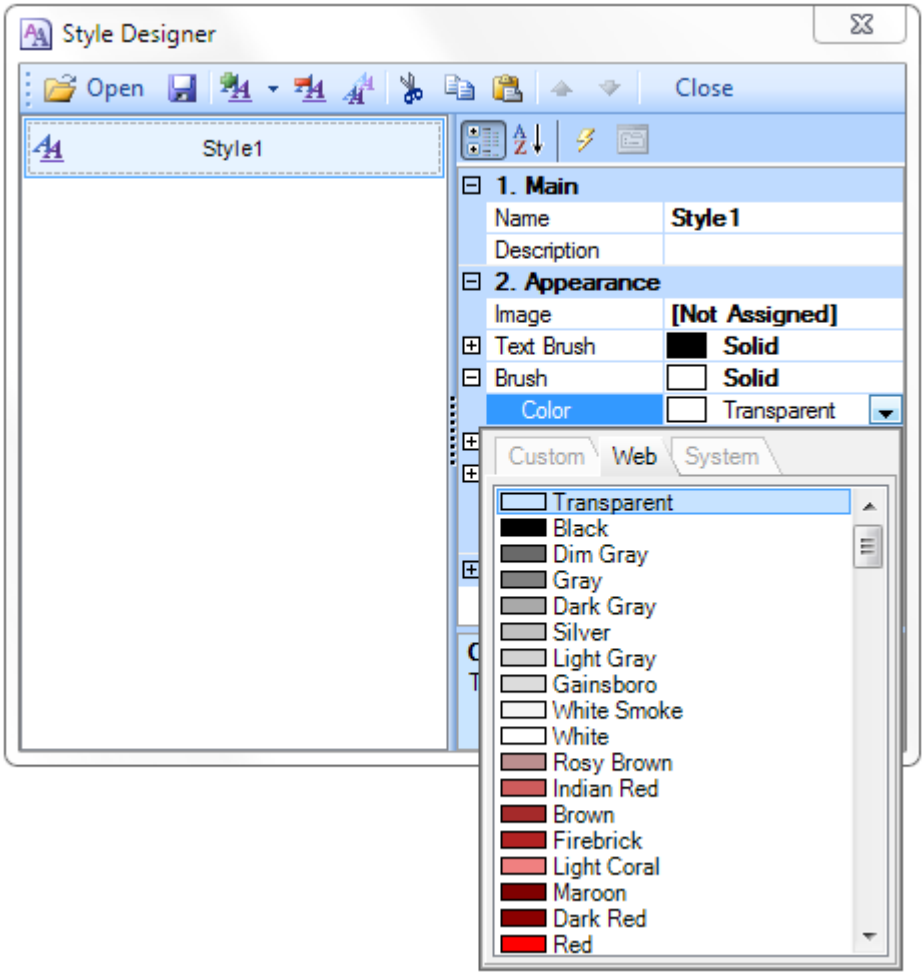


Click **Close**. Then a new value in the list of **Even style** and **Odd style** properties (a style of a list of odd and even rows) will appear.

4. To render the report, click the **Preview** button or invoke the **Viewer**, pressing **F5** or clicking the **Preview** menu item.

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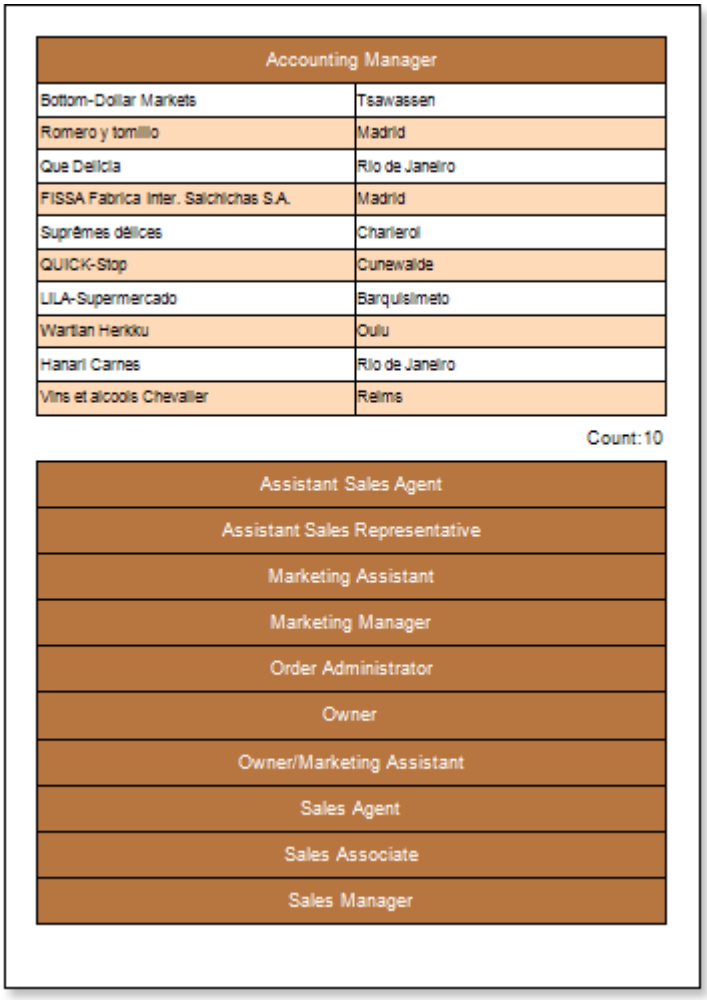

| Accounting Manager | |
|---|---|
| Bottom-Dollar Markets | Tsawassen |
| Romero y tomillo | Madrid |
| Que Delícia | Rio de Janeiro |
| FISSA Fabrica Inter. Salchichas S.A. | Madrid |
| Suprêmes délices | Charleroi |
| QUICK-Stop | Cunewalde |
| LILA-Supermercado | Barquisimeto |
| Wartian Herkku | Oulu |
| Hanari Carnes | Rio de Janeiro |
| Vins et alcools Chevalier | Reims |

Count: 10

| Assistant Sales Agent |
|---|
| Assistant Sales Representative |
| Marketing Assistant |
| Marketing Manager |
| Order Administrator |
| Owner |
| Owner/Marketing Assistant |
| Sales Agent |
| Sales Associate |
| Sales Manager |

## 3.25. Report with Dynamic Data Sorting in Preview

When designing a report, data used in a report are not always sorted in the order that is needed. In this case, the sorting can be done by means of the report generator. One way to sort the data is dynamic sorting. A report with dynamic data sorting in the preview window is an interactive report in which changing of dynamic data sorting is done by clicking the component, which dynamic sorting is enabled. Follow the steps below in order to render a report with dynamic data sorting in the preview window:

1. Run the designer;
2. Connect the data:
    2.1. Create a **New Connection**;
    2.2. Create a **New Data Source**;

3. Put a **DataBand** on a page of a report template.

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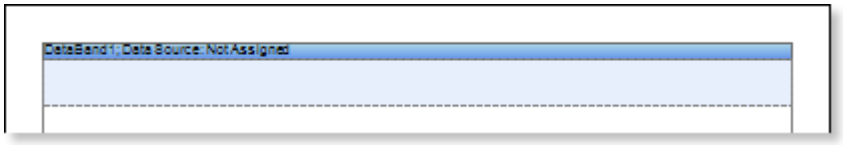
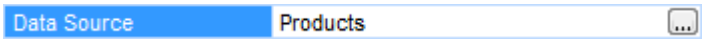


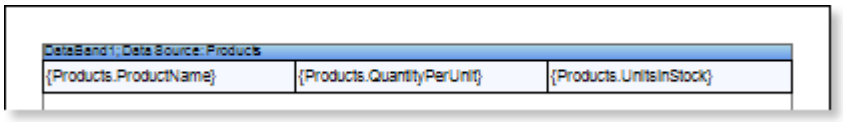

4. Edit **DataBand**:
   4.1. Align the **DataBand** by height;
   4.2. Change values of band properties. For example, set the **Can Break** property to **true**, if you wish the data band to be broken;
   4.3. Change the **DataBand** background;
   4.4. Enable **Borders** for the **DataBand**, if required;
   4.5. Change the border color.

5. Set the data source for the **DataBand** using the **Data Source** property:




6. Put text components with expressions in the **DataBand**. Where expression is a reference to the data field. For example, put three text components with expressions: **{Products.ProductName}**, **{Products.QuantityPerUnit}**, and **{Products.UnitsInStock}**;

7. Edit **Text** and **TextBox** component:
   7.1. Drag and drop the text component in the **DataBand**;
   7.2. Change parameters of the text font: size, type, color;
   7.3. Align the text component by width and height;
   7.4. Change the background of the text component;
   7.5. Align text in the text component;
   7.6. Change the value of properties of the text component. For example, set the **Word Wrap** property to **true**, if you need a text to be wrapped;
   7.7. Enable **Borders** for the text component, if required.
   7.8. Change the border color.




8. Click the **Preview** button or invoke the **Viewer**, pressing **F5** or clicking the **Preview** menu item. After rendering all references to data fields will be changed on data form specified fields. Data will be output in consecutive order from the database that was defined for this report. The amount of copies of the **DataBand** in the rendered report will be the same as the amount of data rows in the database.

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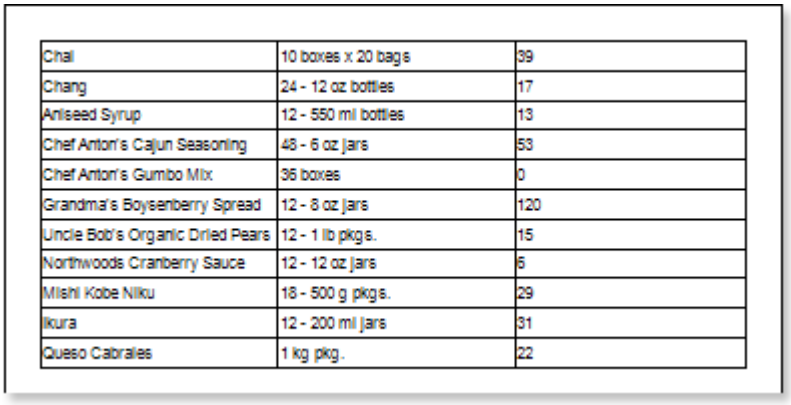
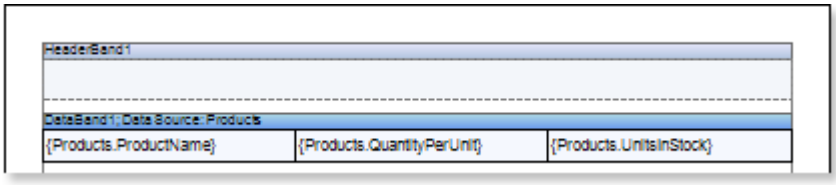
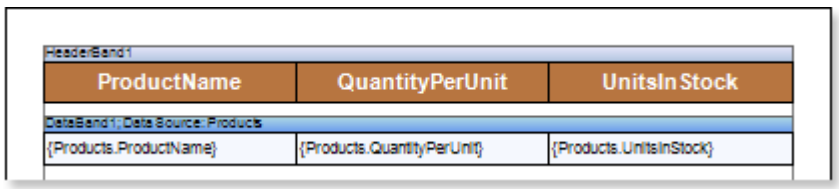


| | | |
|---|---|---|
| Chai | 10 boxes x 20 bags | 39 |
| Chang | 24 - 12 oz bottles | 17 |
| Aniseed Syrup | 12 - 550 ml bottles | 13 |
| Chef Anton's Cajun Seasoning | 48 - 6 oz jars | 53 |
| Chef Anton's Gumbo Mix | 36 boxes | 0 |
| Grandma's Boysenberry Spread | 12 - 8 oz jars | 120 |
| Uncle Bob's Organic Dried Pears | 12 - 1 lb pkgs. | 15 |
| Northwoods Cranberry Sauce | 12 - 12 oz jars | 6 |
| Mishi Kobe Niku | 18 - 500 g pkgs. | 29 |
| Ikura | 12 - 200 ml jars | 31 |
| Queso Cabrales | 1 kg pkg. | 22 |

9.Go back to the report template;
10. If needed, add other bands to the report template, for example, **ReportTitleBand** and **ReportSummaryBand**;
11. Edit these bands:
    11.1. Align them by height;
    11.2. Change values of properties, if required;
    11.3. Change the background of bands;
    11.4. Enable **Borders**, if required;
    11.5. Set the border color.




12. Put text components with expressions in the these bands. The expression in the text component is a title in the **ReportTitleBand**, and a summary in the **ReportSummaryBand**.
13. Edit text and text components:
    13.1. Drag and drop the text component in the band;
    13.2. Change font options: size, type, color;
    13.3. Align text component by height and width;
    13.4. Change the background of the text component;
    13.5. Align text in the text component;
    13.6. Change values of text component properties, if required;
    13.7. Enable **Borders** of the text component, if required;
    13.8. Set the border color.




14. Click the **Preview** button or invoke the **Viewer**, pressing **F5** or clicking the **Preview** menu item . After rendering all references to data fields will be changed on data form specified fields. Data will be output in consecutive order from the database that was defined for this report. The amount of

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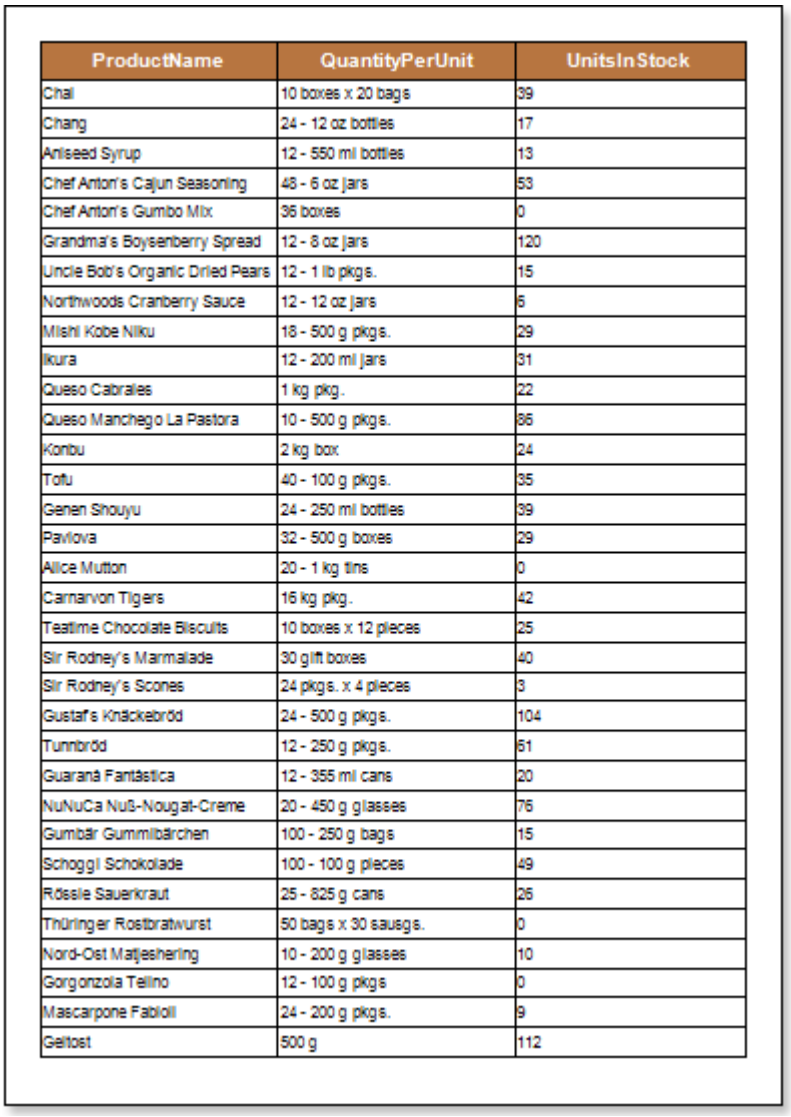
copies of the **DataBand** in the rendered report will be the same as the amount of data rows in the database.



| ProductName | QuantityPerUnit | UnitsInStock |
|---|---|---|
| Chai | 10 boxes x 20 bags | 39 |
| Chang | 24 - 12 oz bottles | 17 |
| Aniseed Syrup | 12 - 550 ml bottles | 13 |
| Chef Anton's Cajun Seasoning | 48 - 6 oz jars | 53 |
| Chef Anton's Gumbo Mix | 36 boxes | 0 |
| Grandma's Boysenberry Spread | 12 - 8 oz jars | 120 |
| Uncle Bob's Organic Dried Pears | 12 - 1 lb pkgs. | 15 |
| Northwoods Cranberry Sauce | 12 - 12 oz jars | 6 |
| Mishi Kobe Niku | 18 - 500 g pkgs. | 29 |
| Ikura | 12 - 200 ml jars | 31 |
| Queso Cabrales | 1 kg pkg. | 22 |
| Queso Manchego La Pastora | 10 - 500 g pkgs. | 86 |
| Konbu | 2 kg box | 24 |
| Tofu | 40 - 100 g pkgs. | 35 |
| Genen Shouyu | 24 - 250 ml bottles | 39 |
| Pavlova | 32 - 500 g boxes | 29 |
| Alice Mutton | 20 - 1 kg tins | 0 |
| Carnarvon Tigers | 16 kg pkg. | 42 |
| Teatime Chocolate Biscuits | 10 boxes x 12 pieces | 25 |
| Sir Rodney's Marmalade | 30 gift boxes | 40 |
| Sir Rodney's Scones | 24 pkgs. x 4 pieces | 3 |
| Gustaf's Knäckebröd | 24 - 500 g pkgs. | 104 |
| Tunnbröd | 12 - 250 g pkgs. | 61 |
| Guaraná Fantástica | 12 - 355 ml cans | 20 |
| NuNuCa Nuß-Nougat-Creme | 20 - 450 g glasses | 76 |
| Gumbär Gummibärchen | 100 - 250 g bags | 15 |
| Schoggi Schokolade | 100 - 100 g pieces | 49 |
| Rössle Sauerkraut | 25 - 825 g cans | 26 |
| Thüringer Rostbratwurst | 50 bags x 30 sausgs. | 0 |
| Nord-Ost Matjeshering | 10 - 200 g glasses | 10 |
| Gorgonzola Telino | 12 - 100 g pkgs | 0 |
| Mascarpone Fabioli | 24 - 200 g pkgs. | 9 |
| Geitost | 500 g | 112 |

15. Go back to the report template;
16. Select a text component or any other component, on what one clicks and in the rendered report sorting will be done. In this case, select the **TextBox4** component in the **HeaderBand** with the **ProductName** text;
17. Change the value of the **Interaction.Sorting Column** property. The value of this property will be a column of the data source by what sorting will be be done. Set the **Iteraction.Sorting Column** property to **DataBand1.ProductName**;
18. Click the **Preview** button or invoke the **Viewer**, pressing **F5** or clicking the **Preview** menu item . After rendering all references to data fields will be changed on data form specified fields. Data will be output in consecutive order from the database that was defined for this report. The amount of copies of the **DataBand** in the rendered report will be the same as the amount of data rows in the database.

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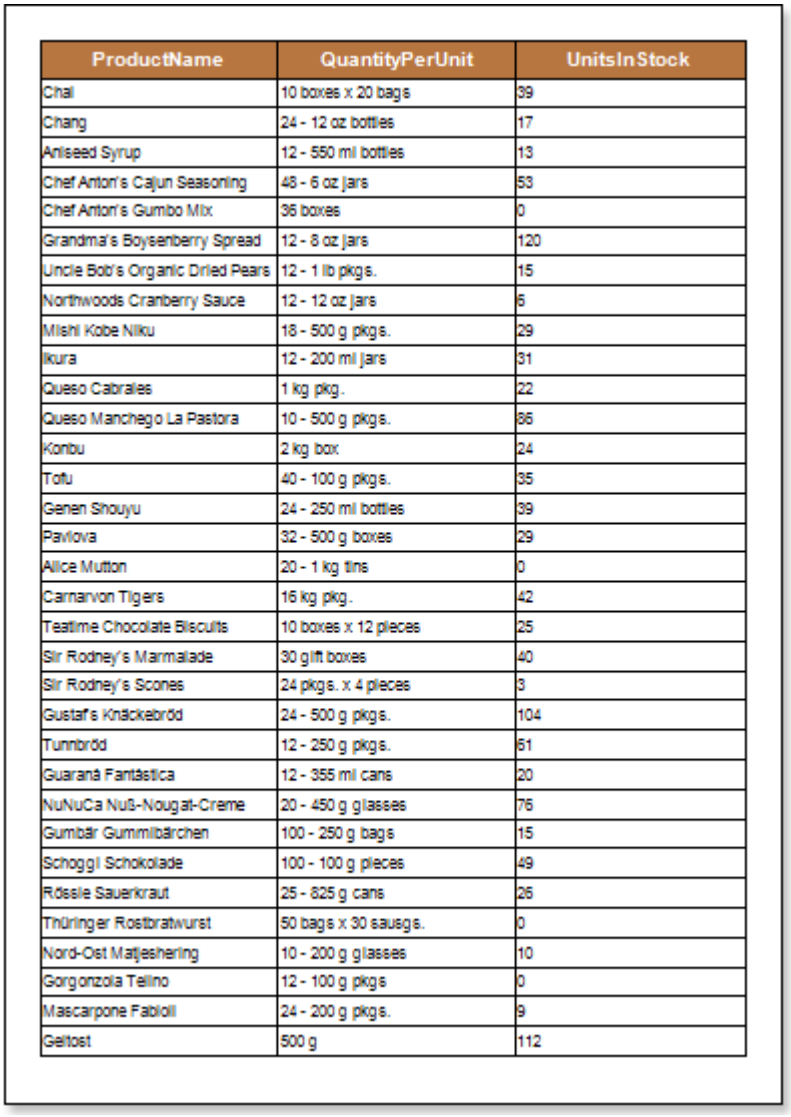

| ProductName | QuantityPerUnit | UnitsInStock |
|---|---|---|
| Chai | 10 boxes x 20 bags | 39 |
| Chang | 24 - 12 oz bottles | 17 |
| Aniseed Syrup | 12 - 550 ml bottles | 13 |
| Chef Anton's Cajun Seasoning | 48 - 6 oz jars | 53 |
| Chef Anton's Gumbo Mix | 36 boxes | 0 |
| Grandma's Boysenberry Spread | 12 - 8 oz jars | 120 |
| Uncle Bob's Organic Dried Pears | 12 - 1 lb pkgs. | 15 |
| Northwoods Cranberry Sauce | 12 - 12 oz jars | 6 |
| Mishi Kobe Niku | 18 - 500 g pkgs. | 29 |
| Ikura | 12 - 200 ml jars | 31 |
| Queso Cabrales | 1 kg pkg. | 22 |
| Queso Manchego La Pastora | 10 - 500 g pkgs. | 86 |
| Konbu | 2 kg box | 24 |
| Tofu | 40 - 100 g pkgs. | 35 |
| Genen Shouyu | 24 - 250 ml bottles | 39 |
| Pavlova | 32 - 500 g boxes | 29 |
| Alice Mutton | 20 - 1 kg tins | 0 |
| Carnarvon Tigers | 16 kg pkg. | 42 |
| Teatime Chocolate Biscuits | 10 boxes x 12 pieces | 25 |
| Sir Rodney's Marmalade | 30 gift boxes | 40 |
| Sir Rodney's Scones | 24 pkgs. x 4 pieces | 3 |
| Gustaf's Knäckebröd | 24 - 500 g pkgs. | 104 |
| Tunnbröd | 12 - 250 g pkgs. | 61 |
| Guaraná Fantástica | 12 - 355 ml cans | 20 |
| NuNuCa Nuß-Nougat-Creme | 20 - 450 g glasses | 76 |
| Gumbär Gummibärchen | 100 - 250 g bags | 15 |
| Schoggi Schokolade | 100 - 100 g pieces | 49 |
| Rössle Sauerkraut | 25 - 825 g cans | 26 |
| Thüringer Rostbratwurst | 50 bags x 30 sausgs. | 0 |
| Nord-Ost Matjeshering | 10 - 200 g glasses | 10 |
| Gorgonzola Telino | 12 - 100 g pkgs | 0 |
| Mascarpone Fabioli | 24 - 200 g pkgs. | 9 |
| Geitost | 500 g | 112 |

19. To enable sorting of data by the specified data column, you should click a report component which the **Iteraction.Sorting Column** property was set earlier. In our example, you should click the **TextBox4**. After clicking the text component, data will be sorted in **Ascending** direction. To change the sorting direction from **Ascending** to **Descending**, you need to click the text component again, i.e. each time after clicking the text component sorting direction will be changed. The picture below shows the first page of the report rendered with different sorting directions:

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Ascending

| ProductName | QuantityPerUnit | UnitsInStock |
|---|---|---|
| Alice Mutton | 20 - 1 kg tins | 0 |
| Aniseed Syrup | 12 - 550 ml bottles | 13 |
| Boston Crab Meat | 24 - 4 oz tins | 123 |
| Camembert Pierrot | 15 - 300 g rounds | 19 |
| Carnarvon Tigers | 16 kg pkg. | 42 |
| Chai | 10 boxes x 20 bags | 39 |
| Chang | 24 - 12 oz bottles | 17 |
| Chartreuse verte | 750 cc per bottle | 69 |
| Chef Anton's Cajun Seasoning | 48 - 6 oz jars | 53 |
| Chef Anton's Gumbo Mix | 36 boxes | 0 |
| Chocolade | 10 pkgs. | 15 |
| Côte de Blaye | 12 - 75 cl bottles | 17 |
| Escargots de Bourgogne | 24 pieces | 62 |
| Filo Mix | 16 - 2 kg boxes | 38 |
| Flotemysost | 10 - 500 g pkgs. | 26 |
| Geitost | 500 g | 112 |
| Genen Shouyu | 24 - 250 ml bottles | 39 |
| Gnocchi di nonna Alice | 24 - 250 g pkgs. | 21 |
| Gorgonzola Telino | 12 - 100 g pkgs | 0 |
| Grandma's Boysenberry Spread | 12 - 8 oz jars | 120 |
| Gravad lax | 12 - 500 g pkgs. | 11 |
| Guaraná Fantástica | 12 - 355 ml cans | 20 |
| Gudbrandsdalsost | 10 kg pkg. | 26 |
| Gula Malacca | 20 - 2 kg bags | 27 |
| Gumbär Gummibärchen | 100 - 250 g bags | 15 |
| Gustaf's Knäckebröd | 24 - 500 g pkgs. | 104 |
| Ikura | 12 - 200 ml jars | 31 |
| Inlagd Sill | 24 - 250 g  jars | 112 |
| Ipoh Coffee | 16 - 500 g tins | 17 |
| Jack's New England Clam Chowder | 12 - 12 oz cans | 85 |
| Konbu | 2 kg box | 24 |
| Lakkalikööri | 500 ml | 57 |
| Laughing Lumberjack Lager | 24 - 12 oz bottles | 52 |

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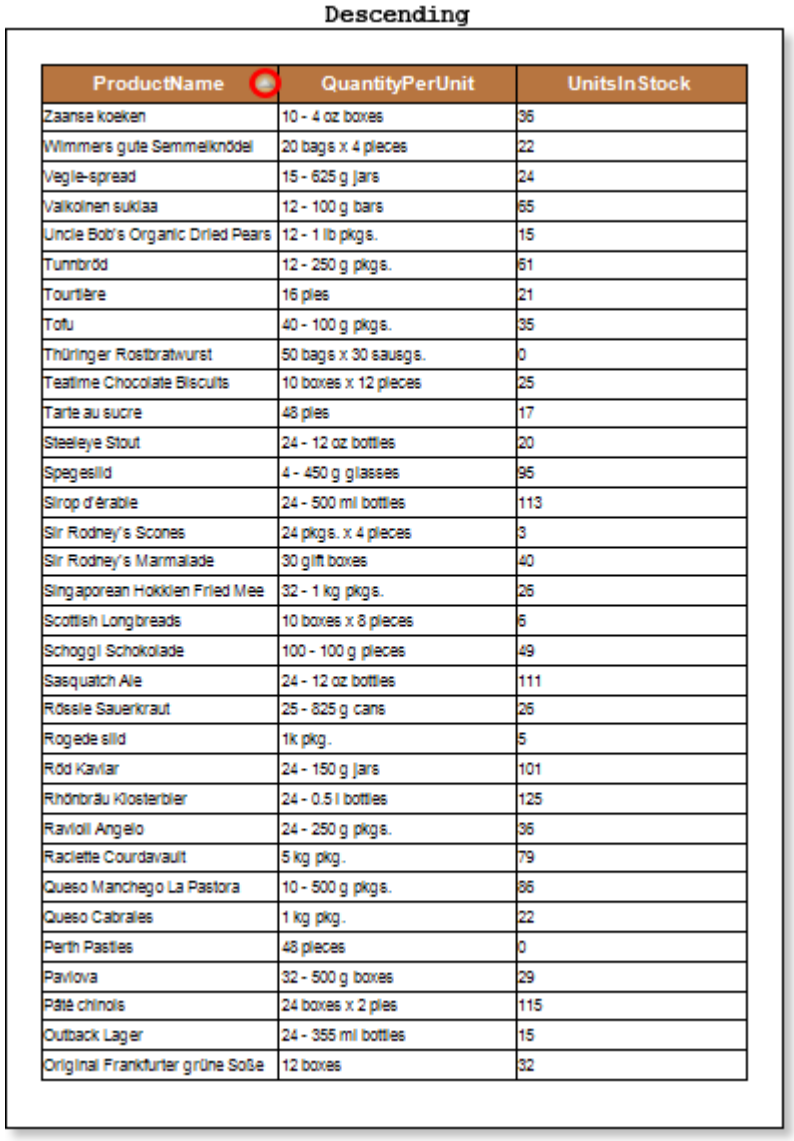


| ProductName | QuantityPerUnit | UnitsInStock |
|---|---|---|
| Zaanse koeken | 10 - 4 oz boxes | 36 |
| Wimmers gute Semmelknödel | 20 bags x 4 pieces | 22 |
| Vegie-spread | 15 - 625 g jars | 24 |
| Valkoinen suklaa | 12 - 100 g bars | 65 |
| Uncle Bob's Organic Dried Pears | 12 - 1 lb pkgs. | 15 |
| Tunnbröd | 12 - 250 g pkgs. | 61 |
| Tourtière | 16 pies | 21 |
| Tofu | 40 - 100 g pkgs. | 35 |
| Thüringer Rostbratwurst | 50 bags x 30 sausgs. | 0 |
| Teatime Chocolate Biscuits | 10 boxes x 12 pieces | 25 |
| Tarte au sucre | 48 pies | 17 |
| Steeleye Stout | 24 - 12 oz bottles | 20 |
| Spegesild | 4 - 450 g glasses | 95 |
| Sirop d'érable | 24 - 500 ml bottles | 113 |
| Sir Rodney's Scones | 24 pkgs. x 4 pieces | 3 |
| Sir Rodney's Marmalade | 30 gift boxes | 40 |
| Singaporean Hokkien Fried Mee | 32 - 1 kg pkgs. | 26 |
| Scottish Longbreads | 10 boxes x 8 pieces | 6 |
| Schoggi Schokolade | 100 - 100 g pieces | 49 |
| Sasquatch Ale | 24 - 12 oz bottles | 111 |
| Rössle Sauerkraut | 25 - 825 g cans | 26 |
| Rogede sild | 1k pkg. | 5 |
| Röd Kaviar | 24 - 150 g jars | 101 |
| Rhönbräu Klosterbier | 24 - 0.5 l bottles | 125 |
| Ravioli Angelo | 24 - 250 g pkgs. | 36 |
| Raclette Courdavault | 5 kg pkg. | 79 |
| Queso Manchego La Pastora | 10 - 500 g pkgs. | 86 |
| Queso Cabrales | 1 kg pkg. | 22 |
| Perth Pasties | 48 pieces | 0 |
| Pavlova | 32 - 500 g boxes | 29 |
| Pâté chinois | 24 boxes x 2 pies | 115 |
| Outback Lager | 24 - 355 ml bottles | 15 |
| Original Frankfurter grüne Soße | 12 boxes | 32 |

Sorting direction displays the "arrow" icon.

## Adding Styles

1. Go back to the report template;
2. Select **DataBand**;
3. Change values of **Even style** and **Odd style** properties. If values of these properties are not set, then select the **Edit Styles** in the list of values of these properties and, using **Style Designer**, create a new style. The picture below shows the **Style Designer**:

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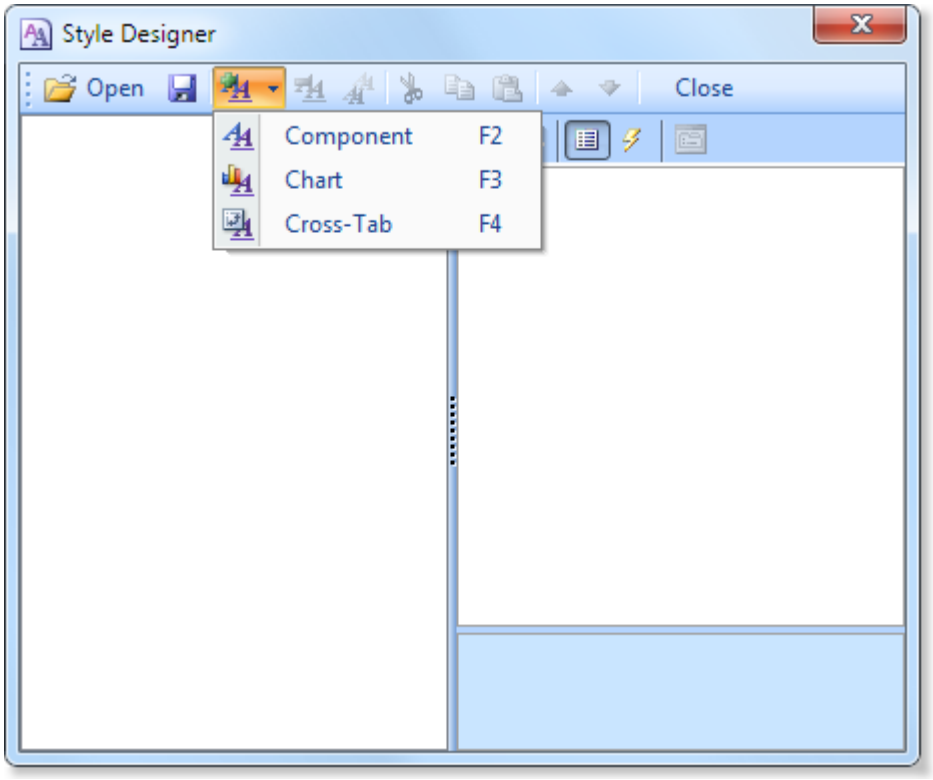


Click the **Add Style** button to start creating a style. Select **Component** from the drop down list. Set the **Brush.Color** property to change the background color of a row. The picture below shows a sample of the **Style Designer** with the list of values of the **Brush.Color** property:

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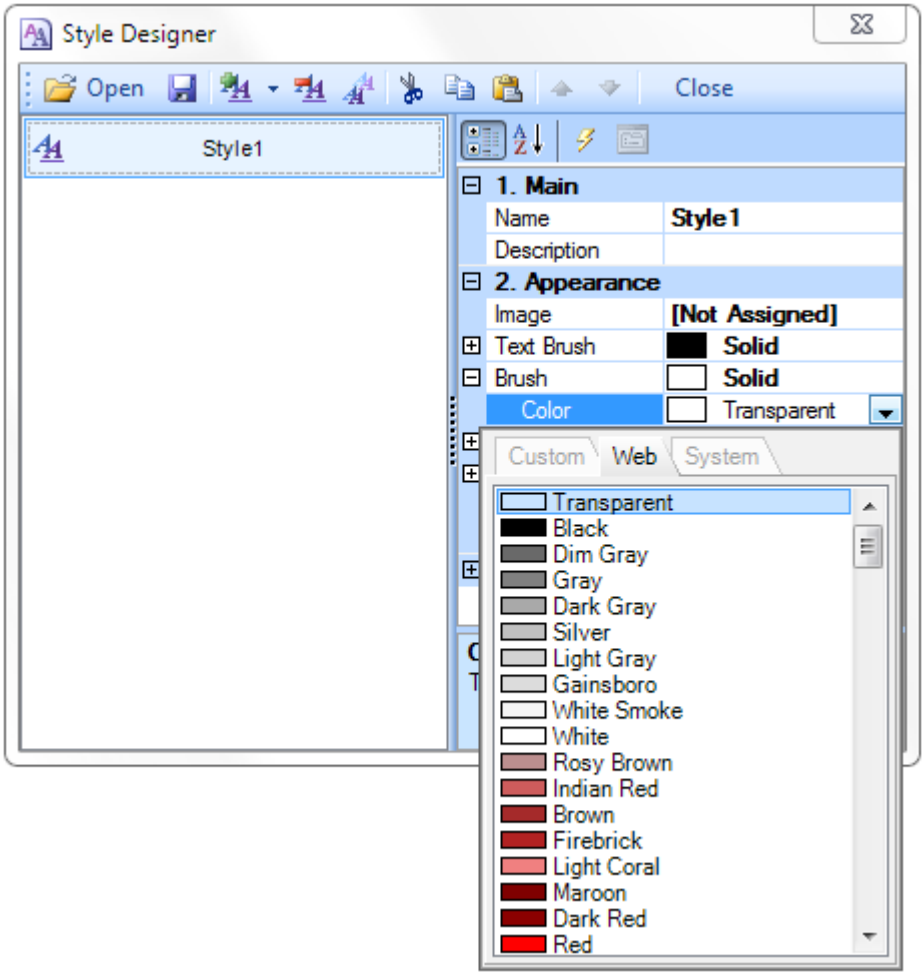


Click **Close**. Then a new value in the list of **Even style** and **Odd style** properties (a style of a list of odd and even rows) will appear.

4. To render the report, click the **Preview** button or invoke the **Viewer**, pressing **F5** or clicking the **Preview** menu item.

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**Ascending**

| ProductName | QuantityPerUnit | UnitsInStock |
|---|---|---|
| Alice Mutton | 20 - 1 kg tins | 0 |
| Aniseed Syrup | 12 - 550 ml bottles | 13 |
| Boston Crab Meat | 24 - 4 oz tins | 123 |
| Camembert Pierrot | 15 - 300 g rounds | 19 |
| Carnarvon Tigers | 16 kg pkg. | 42 |
| Chai | 10 boxes x 20 bags | 39 |
| Chang | 24 - 12 oz bottles | 17 |
| Chartreuse verte | 750 cc per bottle | 69 |
| Chef Anton's Cajun Seasoning | 48 - 6 oz jars | 53 |
| Chef Anton's Gumbo Mix | 36 boxes | 0 |
| Chocolade | 10 pkgs. | 15 |
| Côte de Blaye | 12 - 75 cl bottles | 17 |
| Escargots de Bourgogne | 24 pieces | 62 |
| Filo Mix | 16 - 2 kg boxes | 38 |
| Flotemysost | 10 - 500 g pkgs. | 26 |
| Geitost | 500 g | 112 |
| Genen Shouyu | 24 - 250 ml bottles | 39 |
| Gnocchi di nonna Alice | 24 - 250 g pkgs. | 21 |
| Gorgonzola Telino | 12 - 100 g pkgs | 0 |
| Grandma's Boysenberry Spread | 12 - 8 oz jars | 120 |
| Gravad lax | 12 - 500 g pkgs. | 11 |
| Guaraná Fantástica | 12 - 355 ml cans | 20 |
| Gudbrandsdalsost | 10 kg pkg. | 26 |
| Gula Malacca | 20 - 2 kg bags | 27 |
| Gumbär Gummibärchen | 100 - 250 g bags | 15 |
| Gustaf's Knäckebröd | 24 - 500 g pkgs. | 104 |
| Ikura | 12 - 200 ml jars | 31 |
| Inlagd Sill | 24 - 250 g  jars | 112 |
| Ipoh Coffee | 16 - 500 g tins | 17 |
| Jack's New England Clam Chowder | 12 - 12 oz cans | 85 |
| Konbu | 2 kg box | 24 |
| Lakkalikööri | 500 ml | 57 |
| Laughing Lumberjack Lager | 24 - 12 oz bottles | 52 |

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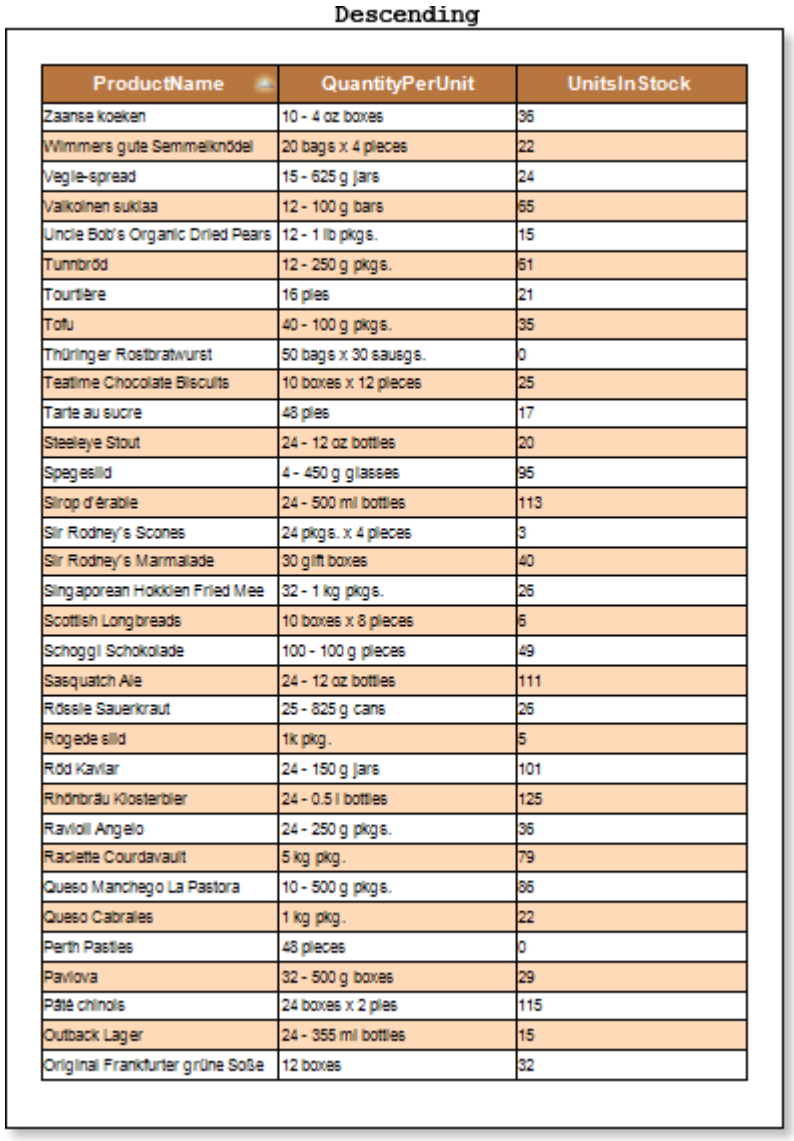

Descending

| ProductName | QuantityPerUnit | UnitsInStock |
|---|---|---|
| Zaanse koeken | 10 - 4 oz boxes | 36 |
| Wimmers gute Semmelknödel | 20 bags x 4 pieces | 22 |
| Vegie-spread | 15 - 625 g jars | 24 |
| Valkoinen suklaa | 12 - 100 g bars | 65 |
| Uncle Bob's Organic Dried Pears | 12 - 1 lb pkgs. | 15 |
| Tunnbröd | 12 - 250 g pkgs. | 61 |
| Tourtière | 16 pies | 21 |
| Tofu | 40 - 100 g pkgs. | 35 |
| Thüringer Rostbratwurst | 50 bags x 30 sausgs. | 0 |
| Teatime Chocolate Biscuits | 10 boxes x 12 pieces | 25 |
| Tarte au sucre | 48 pies | 17 |
| Steeleye Stout | 24 - 12 oz bottles | 20 |
| Spegesild | 4 - 450 g glasses | 95 |
| Sirop d'érable | 24 - 500 ml bottles | 113 |
| Sir Rodney's Scones | 24 pkgs. x 4 pieces | 3 |
| Sir Rodney's Marmalade | 30 gift boxes | 40 |
| Singaporean Hokkien Fried Mee | 32 - 1 kg pkgs. | 26 |
| Scottish Longbreads | 10 boxes x 8 pieces | 6 |
| Schoggi Schokolade | 100 - 100 g pieces | 49 |
| Sasquatch Ale | 24 - 12 oz bottles | 111 |
| Rössle Sauerkraut | 25 - 825 g cans | 26 |
| Rogede sild | 1k pkg. | 5 |
| Röd Kaviar | 24 - 150 g jars | 101 |
| Rhönbräu Klosterbier | 24 - 0.5 l bottles | 125 |
| Ravioli Angelo | 24 - 250 g pkgs. | 36 |
| Raclette Courdavault | 5 kg pkg. | 79 |
| Queso Manchego La Pastora | 10 - 500 g pkgs. | 86 |
| Queso Cabrales | 1 kg pkg. | 22 |
| Perth Pasties | 48 pieces | 0 |
| Pavlova | 32 - 500 g boxes | 29 |
| Pâté chinois | 24 boxes x 2 pies | 115 |
| Outback Lager | 24 - 355 ml bottles | 15 |
| Original Frankfurter grüne Soße | 12 boxes | 32 |

## 3.26. Report with Table Component

Do the following steps to design a report with the **Table** component:

1. Run the designer;
2. Connect the data:
   2.1. Create a **New Connection**;
   2.2. Create a **New Data Source**;

3. Put a **Table** component on a page of a report template.

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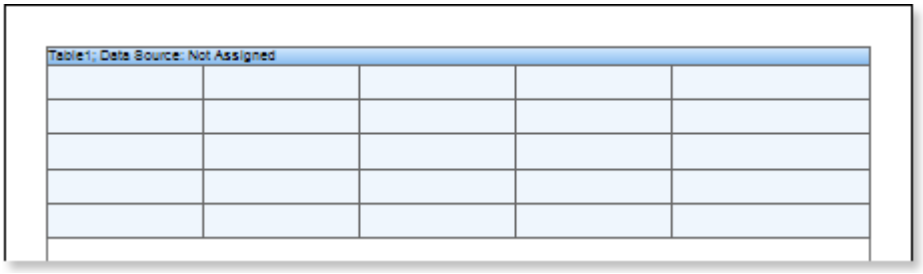
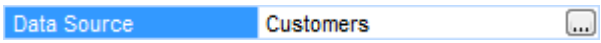
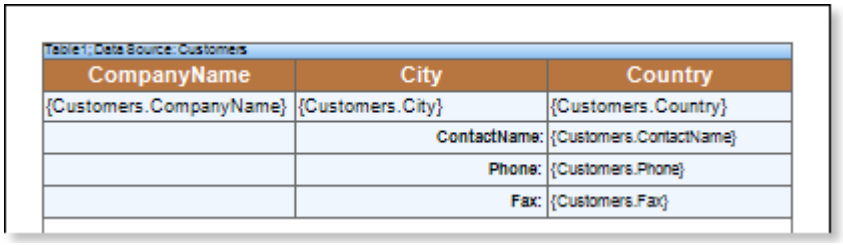



4. Edit the **Table** component:
   4.1. Set the amount of columns and rows using, for example, the **RowCount** and **ColumnCount** properties. Set these properties to 5 and 3 respectively;
   4.2. Set the number of headers and footers in the table using, for example, the **HeaderRowsCount** and **FooterRowsCount** properties. Set the **HeaderRowsCount** property to **1**;
   4.3. Align the **Table** component by height;
   4.4. Change values of the component. for example, set the **CanBreak** property to **true**, if it is required for the **Table** component be broken;

5. Set the data source of the **Table** component using the **Data Source** property:




6. Put some text and expressions in the table cells. For example, cells of the first and third rows will contain only text, that will be a data header. Cells of the second and fourth rows will contain expressions, references to data source;
7. Edit text and cells:
   7.1. Set font parameters of text: size, style, color;
   7.2. Set color of table cells;
   7.3. Align text in cells;
   7.4. Change values of cells. For example, set the **WordWrap** property to **true**, if it is necessary for the text to be wrapped.




8. Click the **Preview** button or invoke the **Viewer**, pressing **F5** or clicking the **Preview** menu item. After rendering all references to data fields will be changed on data form specified fields. Data will be output in consecutive order from the database that was defined for this report. The amount of copies of the **Table** in the rendered report will be the same as the amount of data rows in the database.

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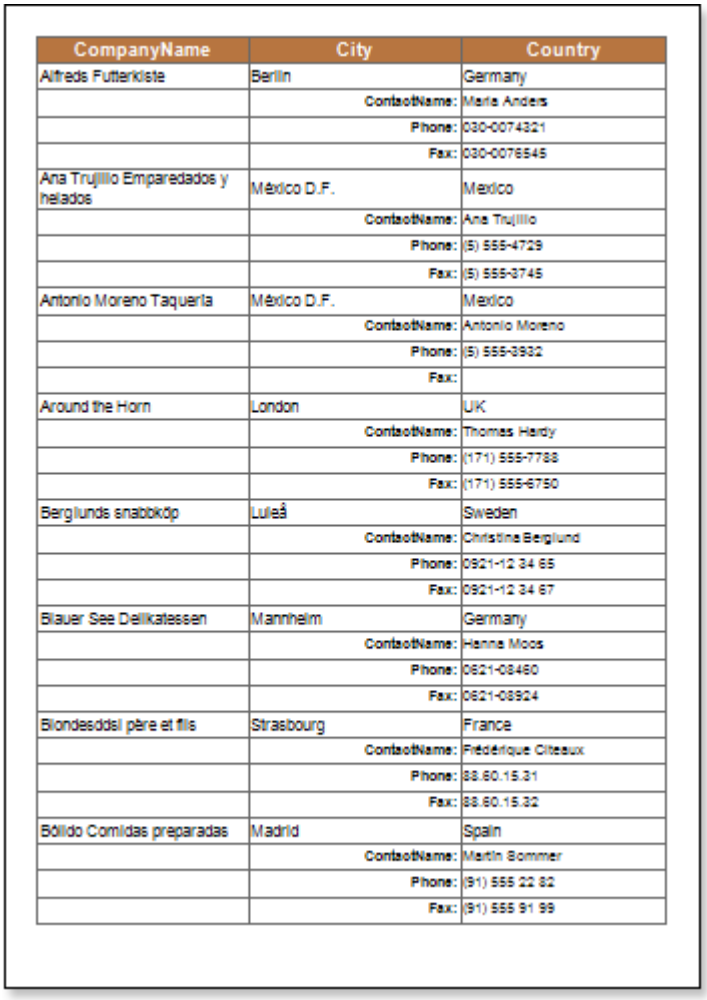

| CompanyName | City | Country |
|---|---|---|
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| Ana Trujillo Emparedados y helados | México D.F. | Mexico |
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| Berglunds snabbköp | Luleå | Sweden |
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| Bólido Comidas preparadas | Madrid | Spain |
| | ContactName: | Martín Sommer |
| | Phone: | (91) 555 22 82 |
| | Fax: | (91) 555 91 99 |

## Adding Styles

1. Go back to the report template;
2. Select the **Table** component;
3. Change values of **Even style** and **Odd style** properties. If values of these properties are not set, then select the **Edit Styles** in the list of values of these properties and, using **Style Designer**, create a new style. The picture below shows the **Style Designer**:

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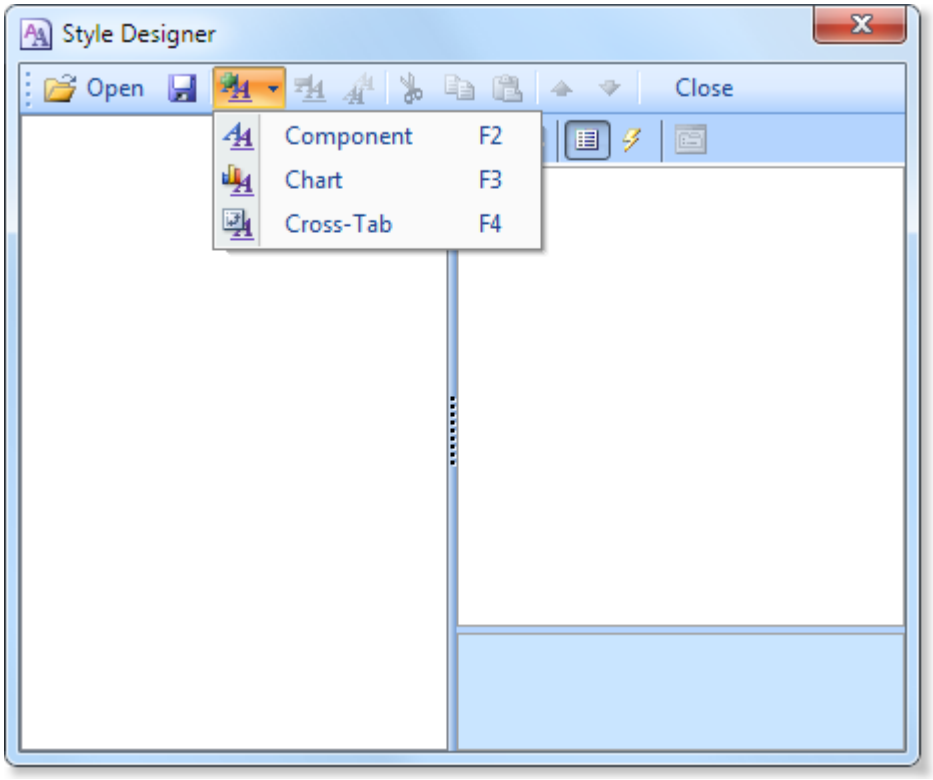


Click the **Add Style** button to start creating a style. Select **Component** from the drop down list. Set the **Brush.Color** property to change the background color of a row. The picture below shows a sample of the **Style Designer** with the list of values of the **Brush.Color** property:

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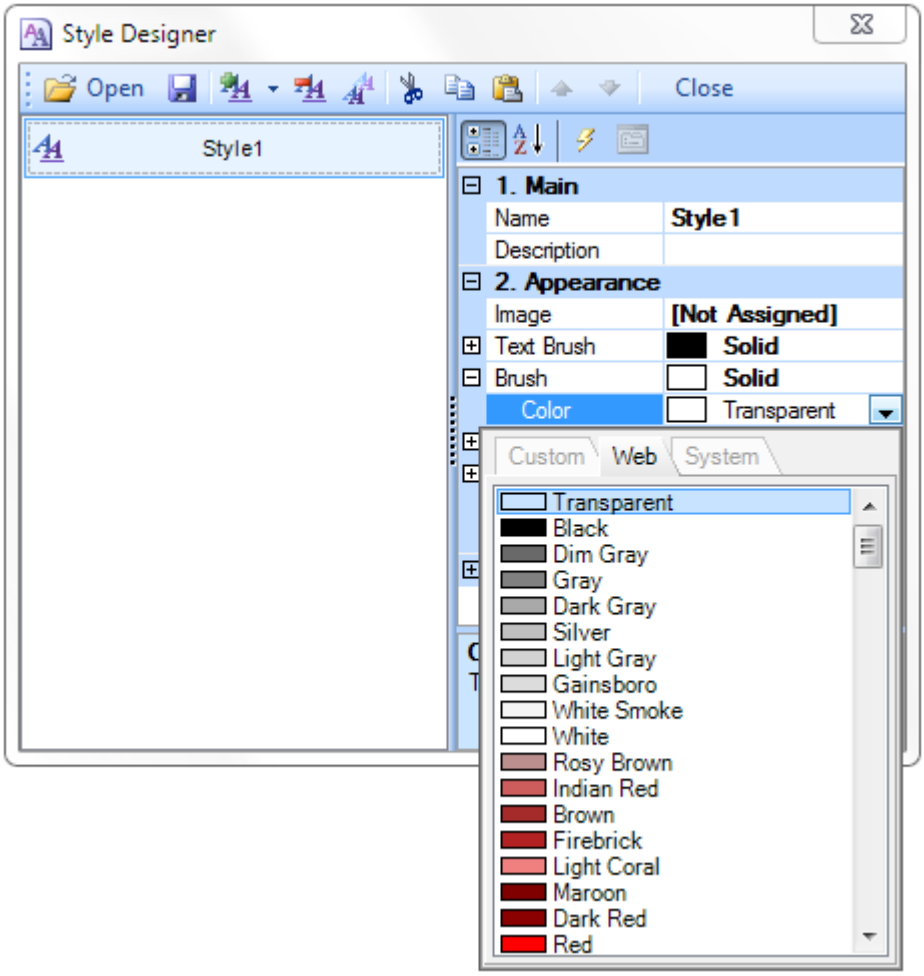


Click **Close**. Then a new value in the list of **Even style** and **Odd style** properties (a style of a list of odd and even rows) will appear.

4. To render the report, click the **Preview** button or invoke the **Viewer**, pressing **F5** or clicking the **Preview** menu item.

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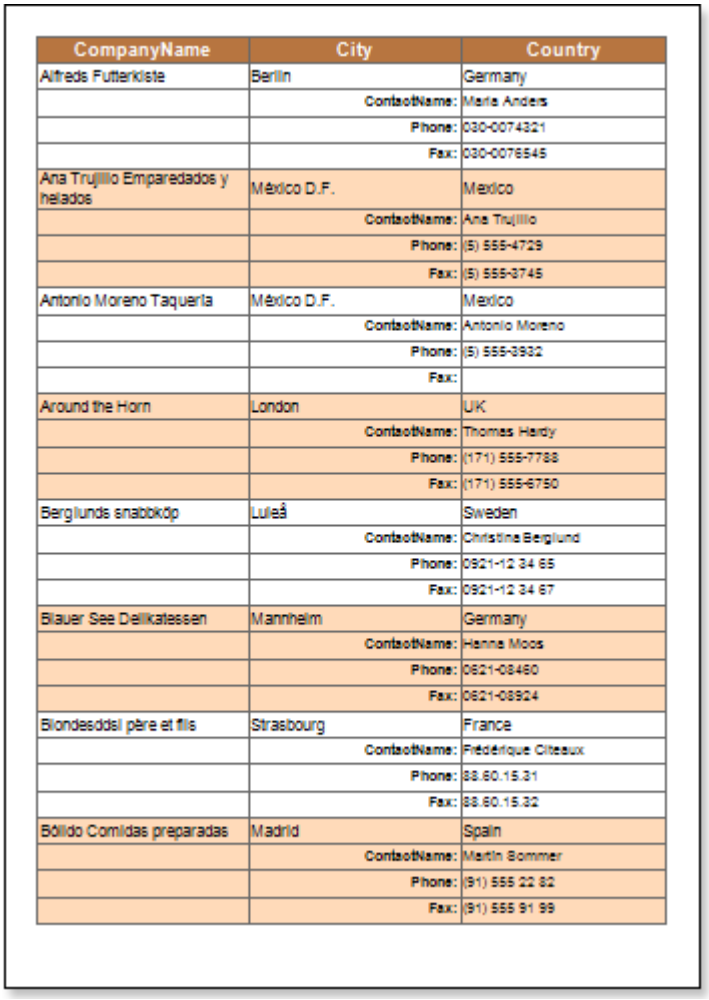

| CompanyName | City | Country |
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| Alfreds Futterkiste | Berlin | Germany |
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| Around the Horn | London | UK |
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| | ContactName: | Christina Berglund |
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| Blauer See Delikatessen | Mannheim | Germany |
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| Blondesddsl père et fils | Strasbourg | France |
| | ContactName: | Frédérique Citeaux |
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| | Fax: | (91) 555 91 99 |

## 3.27. Master-Detail Report with Table

Do the following steps to design a **Master-Detail** report with the **Table** component:

1. Run the designer;
2. Connect the data:
    2.1. Create a **New Connection**;
    2.2. Create a **New Data Source**;

3. Create **Relation** between data sources. If the relation will not be created and/or the **Relation** property of the **Detail** data source will not be filled, then, for **Master** entry, all **Detail** entries will be output.
4. Put two **Table** components on a page of a report template.

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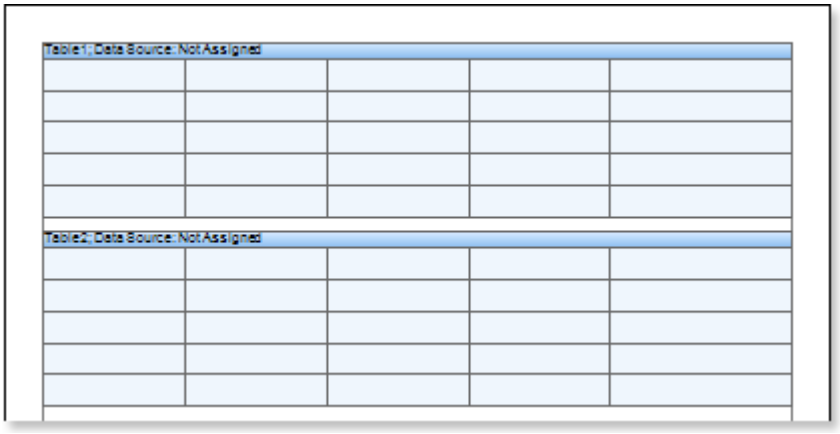



5. Edit **Table** components:

5.1. Change the number of rows and columns in the **Table** component. For example, using the **RowCount** and **ColumnCount** properties. Set the **RowCount** and **ColumnCount** properties of the **Table1** component to **3** and **1** respectively. And for the **Table2** component - values of **3** and **3**;

5.2. Set the number of headers and footers in the table using, for example, the **HeaderRowsCount** and **FooterRowsCount** properties. Set the **FooterRowsCount** property of the **Table1** to **1**. Set the **HeaderRowsCount** and **FooterRowsCount** property of the **Table2** to **1** and **1** respectively;

5.3. Align the **Table** component by height;

5.4. Set the height of rows in the table. To do this, select the **Table** component and, dragging the horizontal border line, edit the row height. In addition, if you want to change the row height, leaving the height of the **Table** component unchanged, it is necessary to hold down the **Ctrl** button before editing the row height;

5.5. Change columns width in the table. To do this, select the **Table** component, and change width by dragging the vertical border of a column;

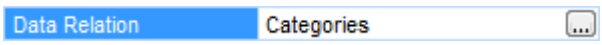
5.6. Change values of properties. For example, set the **Print if Detail Empty** property of the **Table** component, which is the **Master** component in the **Master-Detail** report, to **true**, if you want the **Master** entries be printed in any case, even if the **Detail** entries are not available. Set the **CanShrink** property of the **Table** component, which is the **Detail** component in the **Master-Detail** report to **true**, if you want this component be shrunk;

5.7. Set color of table cells;

5.8. Set **Borders** of cells of the **Table** component, if necessary;

6. Specify data sources for the **Table** components, as well as set the **Master** component. In our case, the **Master** component is the **Table1**. This means that in the **Data Setup** window of the **Table2** component on the tab of the **Master Component**, specify **Table1** as the **Master** component;

7. Fill in the DataRelation property of the **Table2** component, which is the **Detail** entry in this report:




8. Set expressions in table cells. Where an expression is a reference to a data source. For example: the **Table1** component, which is the **Master** component, set the following expressions for the first and second rows: **{Categories.CategoryName}** and **{Categories.Description}**, respectively. The third row of the **Table1** is a total row, and in this case, it is blank. The first row of

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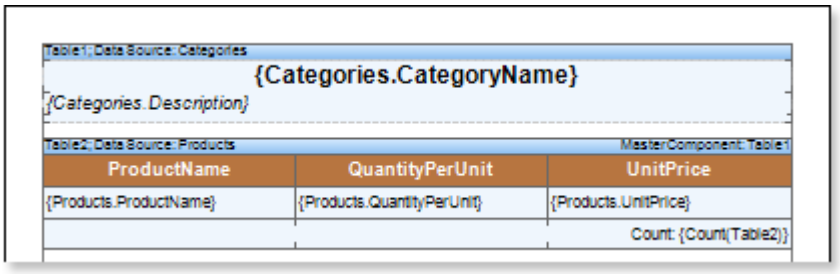
the **Table2** is the header row of data, so the expression in cells of the first row will be the data header. In the cells of the second row we specify references to data sources. The third row in the **Table2** is the total row, so the expression in this line will be a total. Set the Count function for the third row;

9. Edit text boxes and cells:
    9.1. Set the font options: size, style, color;
    9.2. Set the background color of cells;
    9.3. Align the text in cells;
    9.4. Set the value of properties of cells. For example, set the **Word Wrap** property to **true**, if you want the text be wrapped;




10. Click the **Preview** button or invoke the **Viewer**, pressing **F5** or clicking the **Preview** menu item . After rendering all references to data fields will be changed on data form specified fields.

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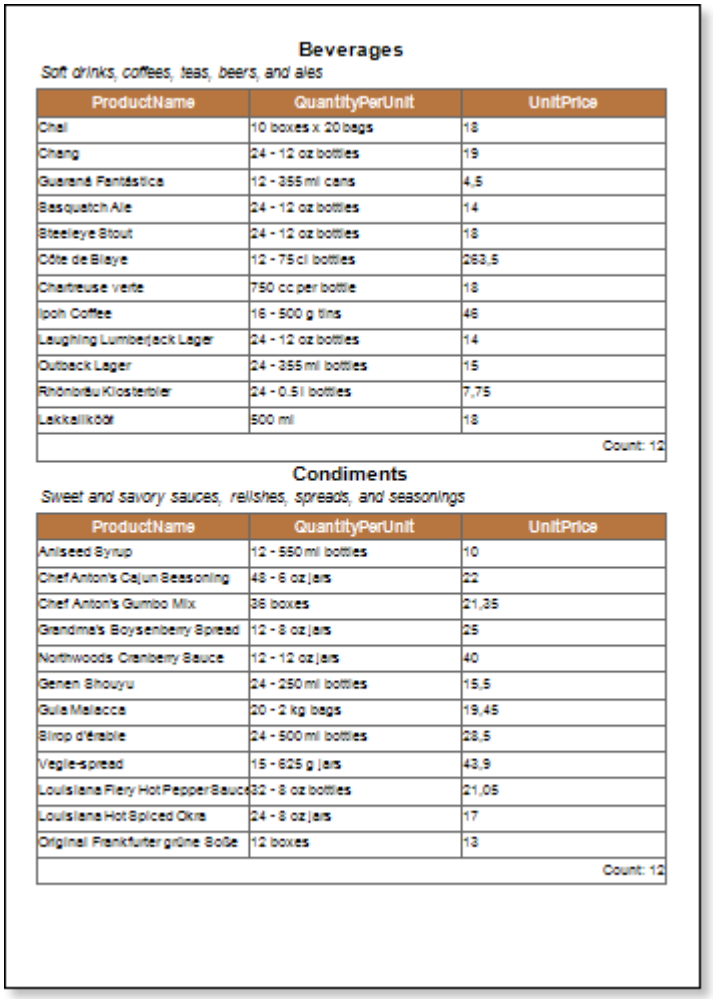

**Beverages**

*Soft drinks, coffees, teas, beers, and ales*

| ProductName | QuantityPerUnit | UnitPrice |
|---|---|---|
| Chai | 10 boxes x 20 bags | 18 |
| Chang | 24 - 12 oz bottles | 19 |
| Guaraná Fantástica | 12 - 355 ml cans | 4,5 |
| Sasquatch Ale | 24 - 12 oz bottles | 14 |
| Steeleye Stout | 24 - 12 oz bottles | 18 |
| Côte de Blaye | 12 - 75 cl bottles | 263,5 |
| Chartreuse verte | 750 cc per bottle | 18 |
| Ipoh Coffee | 16 - 500 g tins | 46 |
| Laughing Lumberjack Lager | 24 - 12 oz bottles | 14 |
| Outback Lager | 24 - 355 ml bottles | 15 |
| Rhönbräu Klosterbier | 24 - 0.5 l bottles | 7,75 |
| Lakkalikööri | 500 ml | 18 |
| | | Count: 12 |

**Condiments**

*Sweet and savory sauces, relishes, spreads, and seasonings*

| ProductName | QuantityPerUnit | UnitPrice |
|---|---|---|
| Aniseed Syrup | 12 - 550 ml bottles | 10 |
| Chef Anton's Cajun Seasoning | 48 - 6 oz jars | 22 |
| Chef Anton's Gumbo Mix | 36 boxes | 21,35 |
| Grandma's Boysenberry Spread | 12 - 8 oz jars | 25 |
| Northwoods Cranberry Sauce | 12 - 12 oz jars | 40 |
| Genen Shouyu | 24 - 250 ml bottles | 15,5 |
| Gula Malacca | 20 - 2 kg bags | 19,45 |
| Sirop d'érable | 24 - 500 ml bottles | 28,5 |
| Vegie-spread | 15 - 625 g jars | 43,9 |
| Louisiana Fiery Hot Pepper Sauce | 32 - 8 oz bottles | 21,05 |
| Louisiana Hot Spiced Okra | 24 - 8 oz jars | 17 |
| Original Frankfurter grüne Soße | 12 boxes | 13 |
| | | Count: 12 |

### Adding Styles

1. Go back to the report template;
2. Select the **Table** component. In this case the **Table2** component;
3. Change values of **Even style** and **Odd style** properties. If values of these properties are not set, then select the **Edit Styles** in the list of values of these properties and, using **Style Designer**, create a new style. The picture below shows the **Style Designer**:

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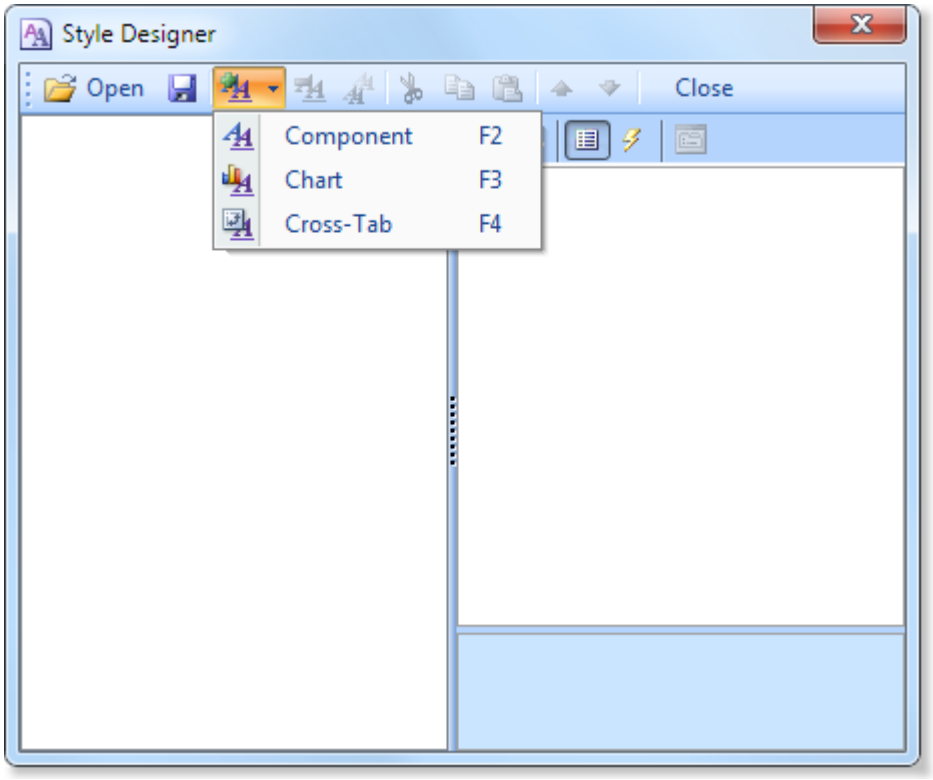


Click the **Add Style** button to start creating a style. Select **Component** from the drop down list. Set the **Brush.Color** property to change the background color of a row. The picture below shows a sample of the **Style Designer** with the list of values of the **Brush.Color** property:

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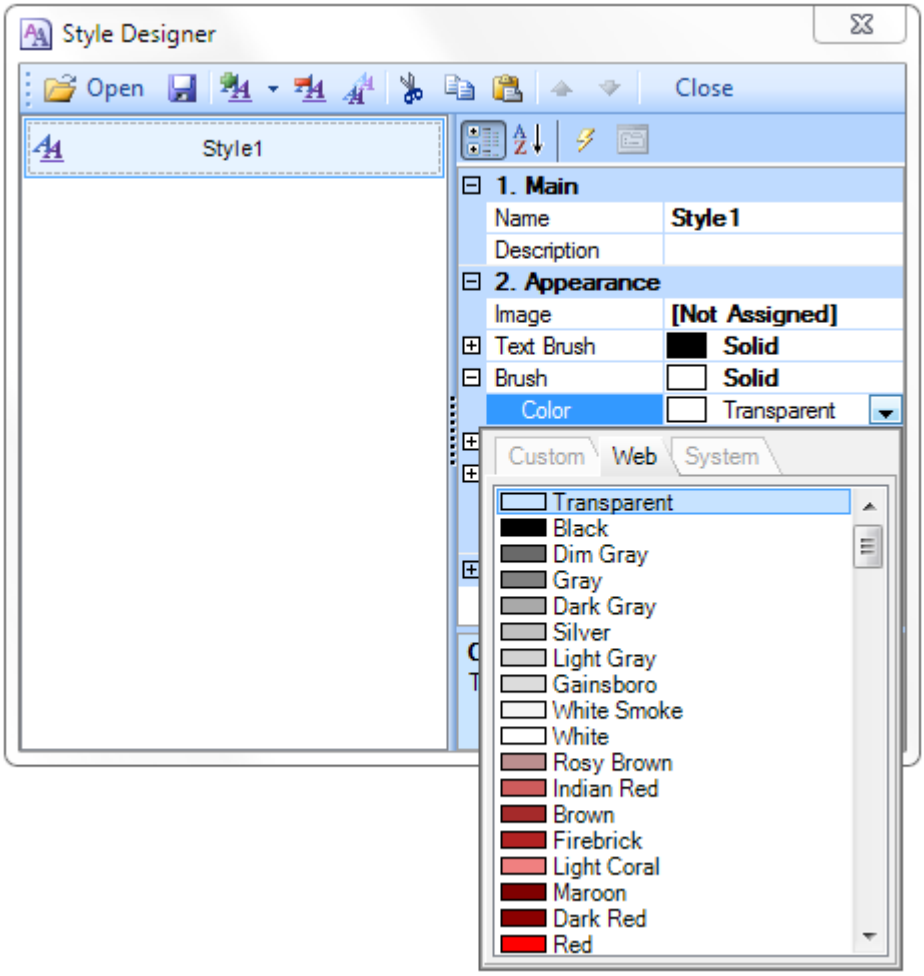


Click **Close**. Then a new value in the list of **Even style** and **Odd style** properties (a style of a list of odd and even rows) will appear.

4. To render the report, click the **Preview** button or invoke the **Viewer**, pressing **F5** or clicking the **Preview** menu item.

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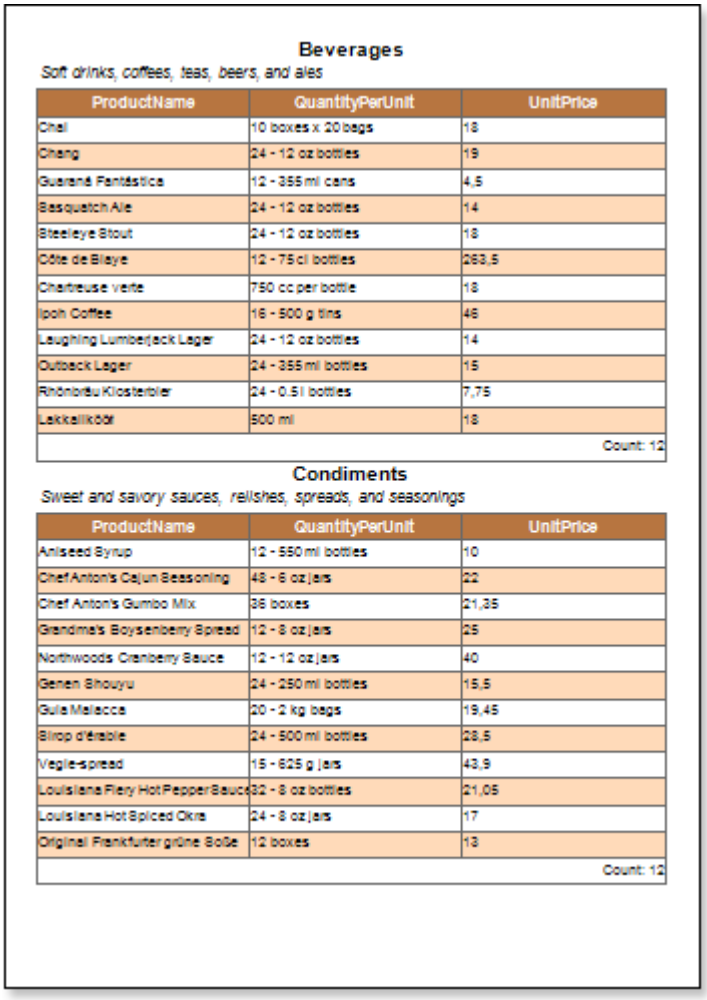

**Beverages**

*Soft drinks, coffees, teas, beers, and ales*

| ProductName | QuantityPerUnit | UnitPrice |
|---|---|---|
| Chai | 10 boxes x 20 bags | 18 |
| Chang | 24 - 12 oz bottles | 19 |
| Guaraná Fantástica | 12 - 355 ml cans | 4,5 |
| Sasquatch Ale | 24 - 12 oz bottles | 14 |
| Steeleye Stout | 24 - 12 oz bottles | 18 |
| Côte de Blaye | 12 - 75 cl bottles | 263,5 |
| Chartreuse verte | 750 cc per bottle | 18 |
| Ipoh Coffee | 16 - 500 g tins | 46 |
| Laughing Lumberjack Lager | 24 - 12 oz bottles | 14 |
| Outback Lager | 24 - 355 ml bottles | 15 |
| Rhönbräu Klosterbier | 24 - 0.5 l bottles | 7,75 |
| Lakkalikööri | 500 ml | 18 |

Count: 12

**Condiments**

*Sweet and savory sauces, relishes, spreads, and seasonings*

| ProductName | QuantityPerUnit | UnitPrice |
|---|---|---|
| Aniseed Syrup | 12 - 550 ml bottles | 10 |
| Chef Anton's Cajun Seasoning | 48 - 6 oz jars | 22 |
| Chef Anton's Gumbo Mix | 36 boxes | 21,35 |
| Grandma's Boysenberry Spread | 12 - 8 oz jars | 25 |
| Northwoods Cranberry Sauce | 12 - 12 oz jars | 40 |
| Genen Shouyu | 24 - 250 ml bottles | 15,5 |
| Gula Malacca | 20 - 2 kg bags | 19,45 |
| Sirop d'érable | 24 - 500 ml bottles | 28,5 |
| Vegie-spread | 15 - 625 g jars | 43,9 |
| Louisiana Fiery Hot Pepper Sauce | 32 - 8 oz bottles | 21,05 |
| Louisiana Hot Spiced Okra | 24 - 8 oz jars | 17 |
| Original Frankfurter grüne Soße | 12 boxes | 13 |

Count: 12

## 3.28. Anchors in Report

A report with anchors is a report in what there is a page of contents and links (called anchors) to other pages in the report. Follow the steps below in order to desing a report with the anchors.

### Creating a page of contents

1. Run the designer;
2. Connect the data:
   2.1. Create a **New Connection**;
   2.2. Create a **New Data Source**;

3. Create **Relation** between data sources. If the relation will not be created and/or the **Relation** property of the **Detail** data source will not be filled, then, for **Master** entry, all **Detail** entries will be output;
4. Change the number of columns on a page. For example, set the **Columns** property to **2**, and the

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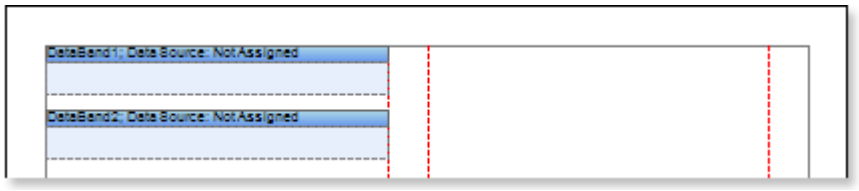
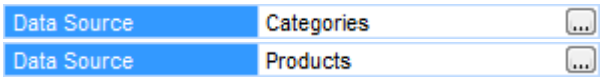
**ColumnGaps** property to **1**;
5. Put two **DataBands** on a page of the report template

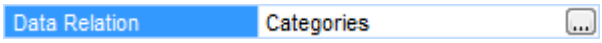



6. Edit **DataBand1** and **DataBand2**:
   6.1. Align them by height;
   6.2. Change values of required properties. For example, if to set the **PrintIfDetailEmpty** property of the **DataBand1** that is the **Master** component in the **Master-Detail** report to **true**, if it is necessary all **Master** entries be printed in any case, even if **Detail** entries not present. And set the **CanShrink** property of the **DataBand2** that is the **Detail** component in the **Master-Detail** report to **true**, if it is necessary to shrink this band;
   6.3. Change the background color of the **DataBands**;
   6.4. Enable **Borders** of the band, if required;

7. Specify the data sources for **DataBands**, as well as assign the **Master** component. In this case, the **Master** component is the upper **DataBand1**, and hence in the **DataSetup** window the lower **DataBand2** on the **Wizard** tab in the **Master Component** should indicate **DataBand1** as a **Master** component. Indicate the data sources for **DataBands** using the **Data Source** property:




8. Fill the **DataRelation** property of the **DataBand2**, which is the **Detail** component:




9. Put text components with expressions on **DataBands**. For example: on the **DataBand1**, which is the **Master** component, we put the text component with the following expression: **{Categories.CategoryName}**, and on the **DataBand2**, which is the **Detail** component we put two text components with expressions: **{Products.ProductName}** and **{GetAnchorPageNumber (sender.TagValue)}**;

10. Edit texts and text components of **DataBands**:
   10.1. Drag and drop a text component in the **DataBand**;
   10.2. Set the font settings: size, style, color;
   10.3. Align the text component by height and width;
   10.4. Set the background color of the text component;
   10.5. Align the text in the component;
   10.6. Change the values of the required properties. For example set **WordWrap** property to **true**, if you want the text be wrapped;
   10.7. If necessary, set **Borders** for the text component;
   10.8. Set the border color.
   10.9. Change the value of the **Hyperlink** property for the text component with the **{Products.ProductName}** expression. In this case, set the **Hyperlink** property to the **#{Products.**

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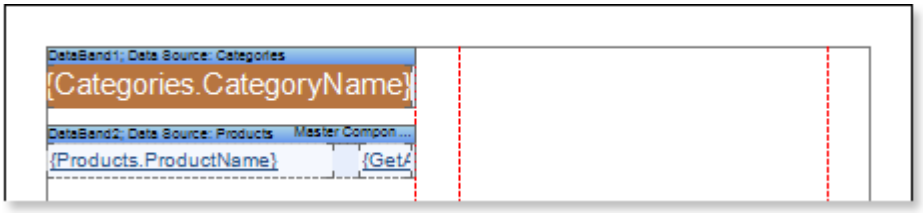
**ProductName}** value;
10.10 Change the value of the **Hyperlink** and **Tag** properties for the text component with the **{GetAnchorPageNumber(sender.TagValue)}**. The **Hyperlink** property should be set to # **{Products.ProductName}**, and the **Tag** property to **{Products.ProductName}**.

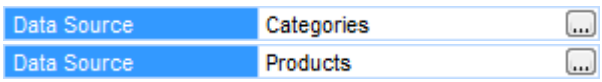



## Creating a master list

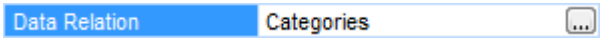
11. Create a second page in the report template;
12. Put two **DataBands** on the page of the report template.

13. Edit **DataBand3** and **DataBand4**:
    13.1. Align the **DataBand** by height;
    13.2. Change the values of the required properties. For example set the **Print if Detail Empty** property of the **DataBand3**, which is the **Master** component in the Master-Detail report to **true**, if you want the Master records be printed in any case, even if the **Detail** entries are not present. Set the **CanShrink** property of the **DataBand4**, which is the **Detail** component in the Master-Detail report to **true**, if it is necessary for this band be shrunk;
    13.3. Set background color of the **DataBand**;
    13.4. If it is necessary, set **Borders** for the **DataBand**;

14. Specify the data sources for DataBands, as well as assign the **Master** component. In this case, the **Master** component is the upper **DataBand3**, and hence in the **DataSetup** window the lower **DataBand4** on the **Wizard** tab in the **Master Component** should indicate **DataBand3** as a **Master** component. Indicate the data sources for **DataBands** using the **Data Source** property:




15. Fill the **DataRelation** property of the **DataBand4**, which is the **Detail** component:




16. Put text components with expressions on **DataBands**. For example: on the **DataBand3**, which is the **Master** component, we put the text component with the following expression: **{Categories. CategoryName}**, and on the **DataBand4**, which is the **Detail** component we put two text components with expressions: **{Products.ProductName}, {Products.QuantityPerUnit}**, and

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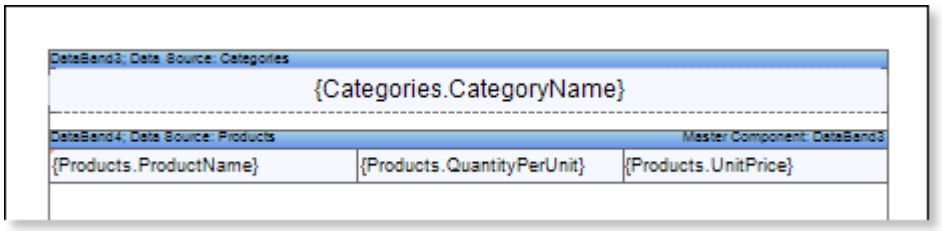
**{Products.UnitPrice}**;

17. Edit texts and text components of **DataBands**:
    17.1. Drag and drop a text component in the **DataBand**;
    17.2. Set the font settings: size, style, color;
    17.3. Align the text component by height and width;
    17.4. Set the background color of the text component;
    17.5. Align the text in the component;
    17.6. Change the values of the required properties. For example set **WordWrap** property to **true** , if you want the text be wrapped;
    17.7. If necessary, set **Borders** for the text component;
    17.8. Set the border color.




18. Select the **DataBand**, which is the **Master** data source. In our case, this is the **DataBand3**:
    18.1. Set the **Interaction.Bookmark** property of the **DataBand3** to **{Categories. CategoryName}**;

19. Select the **DataBand**, which is the Detail data source. In our case, this is the **DataBand4**:
    19.1. Set the **Interaction.Bookmark** property to **{Products.ProductName}**;
    19.2. Subscribe to the event. Set the **RenderingEvent** to **{AddAnchor (Products. ProductName);}**;

**Report rendering**

20. Click the **Preview** button or invoke the **Viewer**, pressing **F5** or clicking the **Preview** menu item . After rendering a report all references to data fields will be changed on data from specified fields.

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Beverages

| | |
|---|---|
| Chai | 3 |
| Chang | 3 |
| Guaraná Fantástica | 3 |
| Sasquatch Ale | 3 |
| Steeleye Stout | 3 |
| Côte de Blaye | 3 |
| Chartreuse verte | 3 |
| Ipoh Coffee | 3 |
| Laughing Lumberjack Lager | 3 |
| Outback Lager | 3 |
| Rhönbräu Klosterbier | 3 |
| Lakkalikööri | 3 |

Condiments

| | |
|---|---|
| Aniseed Syrup | 3 |
| Chef Anton's Cajun Seasoning | 3 |
| Chef Anton's Gumbo Mix | 3 |
| Grandma's Boysenberry Spread | 3 |
| Northwoods Cranberry Sauce | 3 |
| Genen Shouyu | 3 |
| Gula Malacca | 3 |
| Sirop d'érable | 3 |
| Vegie-spread | 3 |
| Louisiana Fiery Hot Pepper Sau | 3 |
| Louisiana Hot Spiced Okra | 3 |
| Original Frankfurter grüne Soße | 3 |

Confections

| | |
|---|---|
| Pavlova | 3 |
| Teatime Chocolate Biscuits | 3 |
| Sir Rodney's Marmalade | 3 |
| Sir Rodney's Scones | 3 |
| NuNuCa Nuß-Nougat-Creme | 3 |
| Gumbär Gummibärchen | 3 |
| Schoggi Schokolade | 4 |
| Zaanse koeken | 4 |
| Chocolade | 4 |
| Maxilaku | 4 |
| Valkoinen suklaa | 4 |
| Tarte au sucre | 4 |
| Scottish Longbreads | 4 |

Dairy Products

| | |
|---|---|
| Queso Cabrales | 4 |
| Queso Manchego La Pastora | 4 |
| Gorgonzola Telino | 4 |
| Mascarpone Fabioli | 4 |
| Geitost | 4 |
| Raclette Courdavault | 4 |
| Camembert Pierrot | 4 |
| Gudbrandsdalsost | 4 |
| Flotemysost | 4 |
| Mozzarella di Giovanni | 4 |

Grains/Cereals

| | |
|---|---|
| Gustaf's Knäckebröd | 4 |
| Tunnbröd | 4 |
| Singaporean Hokkien Fried Mee | 4 |
| Filo Mix | 4 |
| Gnocchi di nonna Alice | 4 |
| Ravioli Angelo | 4 |
| Wimmers gute Semmelknödel | 4 |

Meat/Poultry

| | |
|---|---|
| Mishi Kobe Niku | 5 |
| Alice Mutton | 5 |
| Thüringer Rostbratwurst | 5 |
| Perth Pasties | 5 |
| Tourtière | 5 |
| Pâté chinois | 5 |

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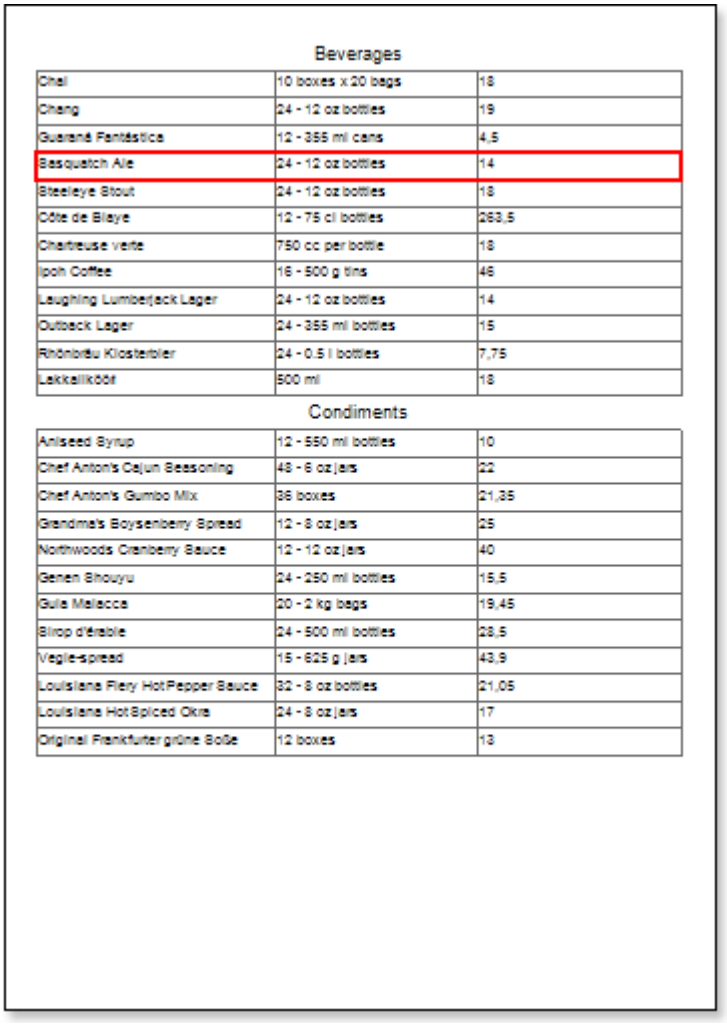

Beverages

| | | |
|---|---|---|
| Chai | 10 boxes x 20 bags | 18 |
| Chang | 24 - 12 oz bottles | 19 |
| Guaraná Fantástica | 12 - 355 ml cans | 4,5 |
| Sasquatch Ale | 24 - 12 oz bottles | 14 |
| Steeleye Stout | 24 - 12 oz bottles | 18 |
| Côte de Blaye | 12 - 75 cl bottles | 263,5 |
| Chartreuse verte | 750 cc per bottle | 18 |
| Ipoh Coffee | 16 - 500 g tins | 46 |
| Laughing Lumberjack Lager | 24 - 12 oz bottles | 14 |
| Outback Lager | 24 - 355 ml bottles | 15 |
| Rhönbräu Klosterbier | 24 - 0.5 l bottles | 7,75 |
| Lakkalikööri | 500 ml | 18 |

Condiments

| | | |
|---|---|---|
| Aniseed Syrup | 12 - 550 ml bottles | 10 |
| Chef Anton's Cajun Seasoning | 48 - 6 oz jars | 22 |
| Chef Anton's Gumbo Mix | 36 boxes | 21,35 |
| Grandma's Boysenberry Spread | 12 - 8 oz jars | 25 |
| Northwoods Cranberry Sauce | 12 - 12 oz jars | 40 |
| Genen Shouyu | 24 - 250 ml bottles | 15,5 |
| Gula Malacca | 20 - 2 kg bags | 19,45 |
| Sirop d'érable | 24 - 500 ml bottles | 28,5 |
| Vegie-spread | 15 - 625 g jars | 43,9 |
| Louisiana Fiery Hot Pepper Sauce | 32 - 8 oz bottles | 21,05 |
| Louisiana Hot Spiced Okra | 24 - 8 oz jars | 17 |
| Original Frankfurter grüne Soße | 12 boxes | 13 |

In the rendered report, when clicking an entry in the table of contents the transition to this entry in the report will be done.

21. Go back to the report template;
22. If needed, add other bands to the report template, for example, **HeaderBand**;
23. Edit this band:
    23.1. Align it by height;
    23.2. Change values of properties, if required;
    23.3. Change the background of the band;
    23.4. Set **Borders**, if required;
    23.5. Set the border color.

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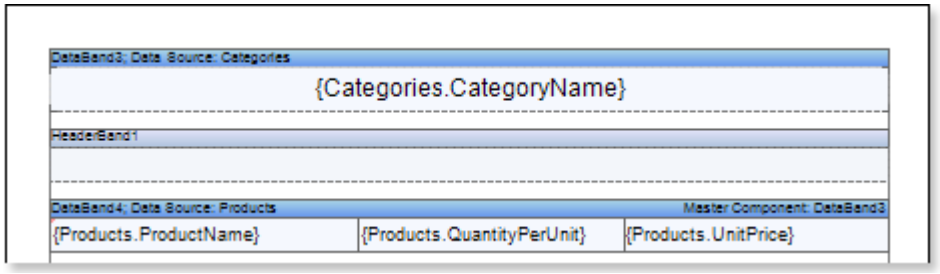
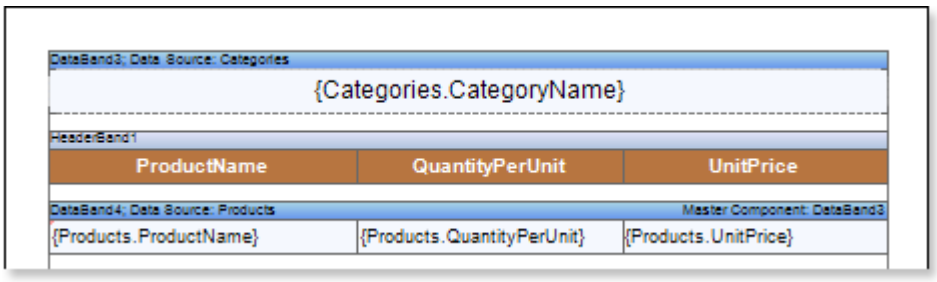



24. Put text components with expressions in this band. The expression in the text component is a header in the **HeaderBand**.
25. Edit text and text components:
    25.1. Drag and drop the text component in the band;
    25.2. Change font options: size, type, color;
    25.3. Align text component by height and width;
    25.4. Change the background of the text component;
    25.5. Align text in the text component;
    25.6. Change values of text component properties, if required;
    25.7. Enable **Borders** of the text component, if required;
    25.8. Set the border color.




26. Click the **Preview** button or invoke the **Viewer**, pressing **F5** or clicking the **Preview** menu item . After rendering all references to data fields will be changed on data form specified fields. Data will be output in consecutive order from the database that was defined for this report. The amount of copies of the **DataBand** in the rendered report will be the same as the amount of data rows in the database.

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Beverages
Chai 3
Chang 3
Guaraná Fantástica 3
Sasquatch Ale 3
Steeleye Stout 3
Côte de Blaye 3
Chartreuse verte 3
Ipoh Coffee 3
Laughing Lumberjack Lager 3
Outback Lager 3
Rhönbräu Klosterbier 3
Lakkalikööri 3
Condiments
Aniseed Syrup 3
Chef Anton's Cajun Seasoning 3
Chef Anton's Gumbo Mix 3
Grandma's Boysenberry Spread 3
Northwoods Cranberry Sauce 3
Genen Shouyu 3
Gula Malacca 3
Sirop d'érable 3
Vegie-spread 3
Louisiana Fiery Hot Pepper Sau 3
Louisiana Hot Spiced Okra 3
Original Frankfurter grüne Soße 3
Confections
Pavlova 3
Teatime Chocolate Biscuits 3
Sir Rodney's Marmalade 3
Sir Rodney's Scones 4
NuNuCa Nuß-Nougat-Creme 4
Gumbär Gummibärchen 4
Schoggi Schokolade 4
Zaanse koeken 4
Chocolade 4
Maxilaku 4
Valkoinen suklaa 4
Tarte au sucre 4
Scottish Longbreads 4
Dairy Products
Queso Cabrales 4
Queso Manchego La Pastora 4
Gorgonzola Telino 4
Mascarpone Fabioli 4
Geitost 4
Raclette Courdavault 4
Camembert Pierrot 4
Gudbrandsdalsost 4
Flotemysost 4
Mozzarella di Giovanni 4
Grains/Cereals
Gustaf's Knäckebröd 4
Tunnbröd 4
Singaporean Hokkien Fried Mee 4
Filo Mix 4
Gnocchi di nonna Alice 5
Ravioli Angelo 5
Wimmers gute Semmelknödel 5
Meat/Poultry
Mishi Kobe Niku 5
Alice Mutton 5
Thüringer Rostbratwurst 5
Perth Pasties 5
Tourtière 5
Pâté chinois 5

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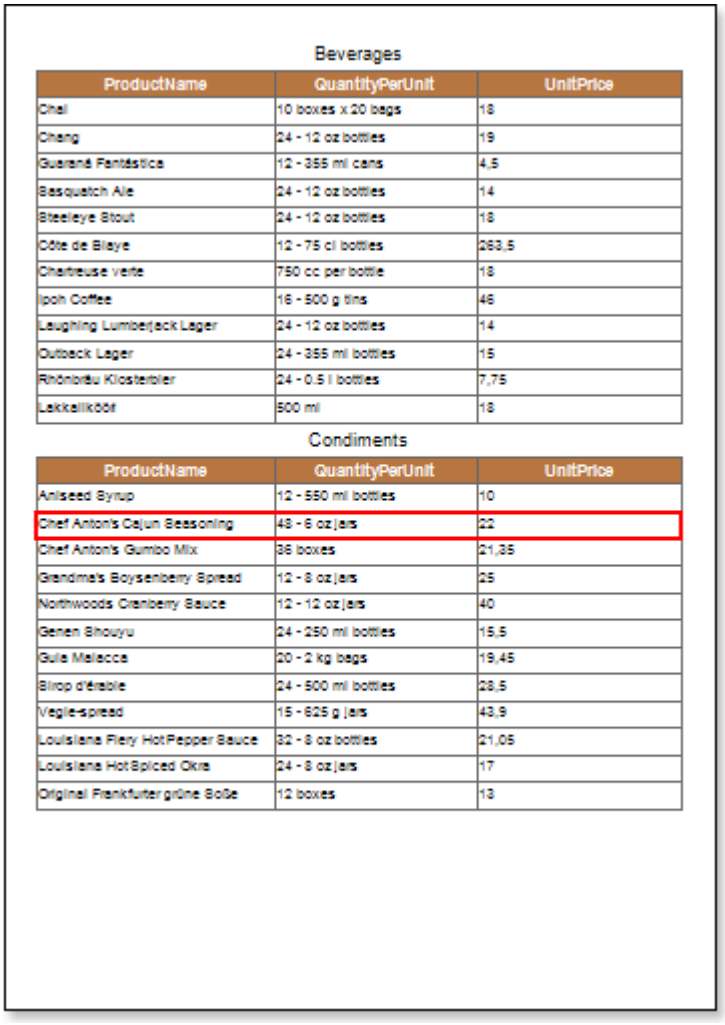

Beverages

| ProductName | QuantityPerUnit | UnitPrice |
|---|---|---|
| Chai | 10 boxes x 20 bags | 18 |
| Chang | 24 - 12 oz bottles | 19 |
| Guaraná Fantástica | 12 - 355 ml cans | 4,5 |
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| Laughing Lumberjack Lager | 24 - 12 oz bottles | 14 |
| Outback Lager | 24 - 355 ml bottles | 15 |
| Rhönbräu Klosterbier | 24 - 0.5 l bottles | 7,75 |
| Lakkalikööri | 500 ml | 18 |

Condiments

| ProductName | QuantityPerUnit | UnitPrice |
|---|---|---|
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| Gula Malacca | 20 - 2 kg bags | 19,45 |
| Sirop d'érable | 24 - 500 ml bottles | 28,5 |
| Vegie-spread | 15 - 625 g jars | 43,9 |
| Louisiana Fiery Hot Pepper Sauce | 32 - 8 oz bottles | 21,05 |
| Louisiana Hot Spiced Okra | 24 - 8 oz jars | 17 |
| Original Frankfurter grüne Soße | 12 boxes | 13 |

## Adding Styles

1. Go back to the report template;
2. Select the **DataBand**. In our case, select the **DataBand4**;
3. Change values of **Even style** and **Odd style** properties. If values of these properties are not set, then select the **Edit Styles** in the list of values of these properties and, using **Style Designer**, create a new style. The picture below shows the **Style Designer**:

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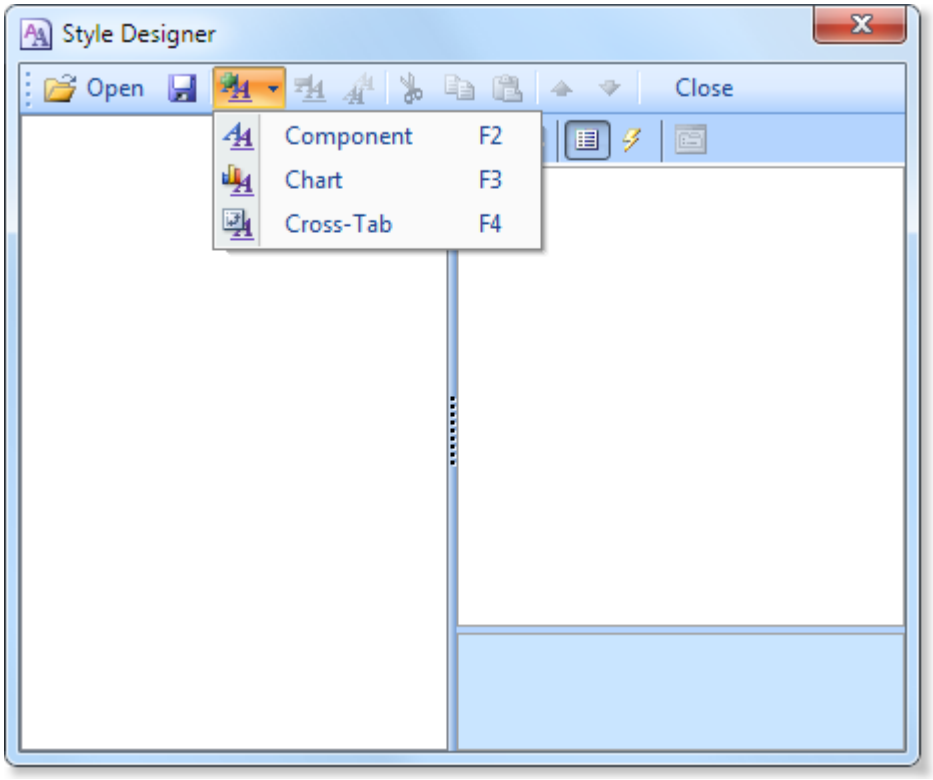


Click the **Add Style** button to start creating a style. Select **Component** from the drop down list. Set the **Brush.Color** property to change the background color of a row. The picture below shows a sample of the **Style Designer** with the list of values of the **Brush.Color** property:

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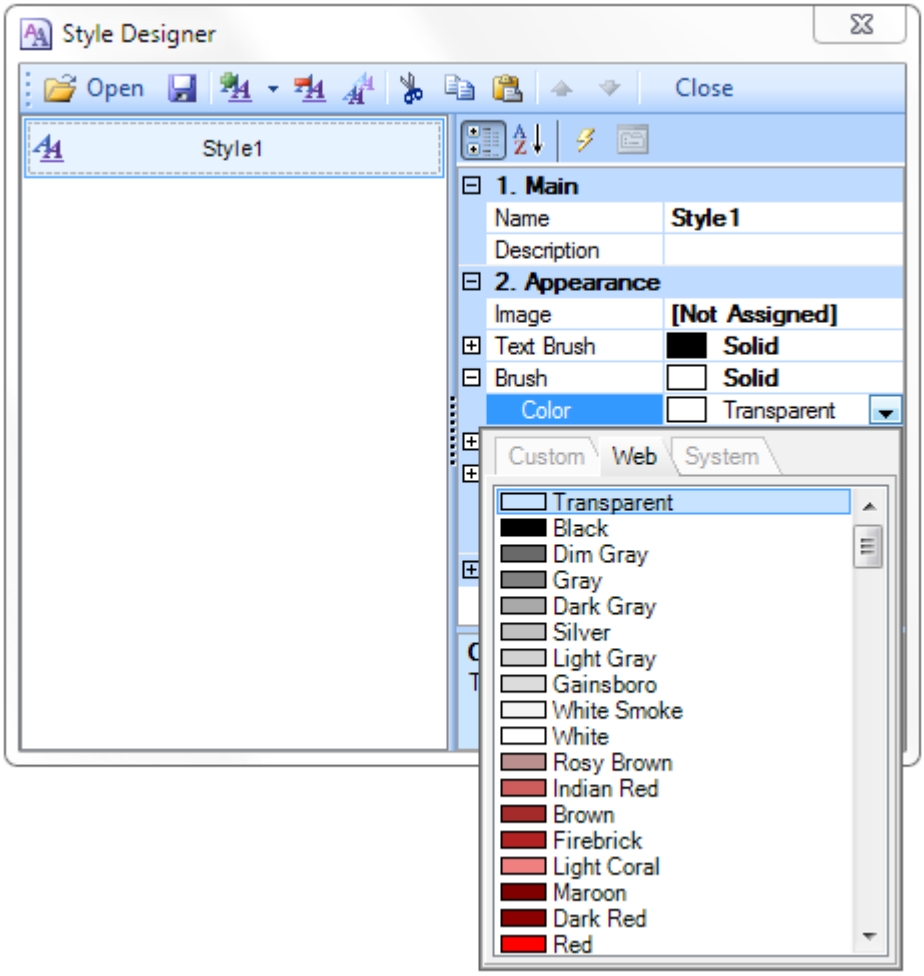


Click **Close**. Then a new value in the list of **Even style** and **Odd style** properties (a style of a list of odd and even rows) will appear.

4. To render the report, click the **Preview** button or invoke the **Viewer**, pressing **F5** or clicking the **Preview** menu item.

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Beverages
Chai 3
Chang 3
Guaraná Fantástica 3
Sasquatch Ale 3
Steeleye Stout 3
Côte de Blaye 3
Chartreuse verte 3
Ipoh Coffee 3
Laughing Lumberjack Lager 3
Outback Lager 3
Rhönbräu Klosterbier 3
Lakkalikööri 3
Condiments
Aniseed Syrup 3
Chef Anton's Cajun Seasoning 3
Chef Anton's Gumbo Mix 3
Grandma's Boysenberry Spread 3
Northwoods Cranberry Sauce 3
Genen Shouyu 3
Gula Malacca 3
Sirop d'érable 3
Vegie-spread 3
Louisiana Fiery Hot Pepper Sau 3
Louisiana Hot Spiced Okra 3
Original Frankfurter grüne Soße 3
Confections
Pavlova 3
Teatime Chocolate Biscuits 3
Sir Rodney's Marmalade 3
Sir Rodney's Scones 4
NuNuCa Nuß-Nougat-Creme 4
Gumbär Gummibärchen 4
Schoggi Schokolade 4
Zaanse koeken 4
Chocolade 4
Maxilaku 4
Valkoinen suklaa 4
Tarte au sucre 4
Scottish Longbreads 4
Dairy Products
Queso Cabrales 4
Queso Manchego La Pastora 4
Gorgonzola Telino 4
Mascarpone Fabioli 4
Geitost 4
Raclette Courdavault 4
Camembert Pierrot 4
Gudbrandsdalsost 4
Flotemysost 4
Mozzarella di Giovanni 4
Grains/Cereals
Gustaf's Knäckebröd 4
Tunnbröd 4
Singaporean Hokkien Fried Mee 4
Filo Mix 4
Gnocchi di nonna Alice 5
Ravioli Angelo 5
Wimmers gute Semmelknödel 5
Meat/Poultry
Mishi Kobe Niku 5
Alice Mutton 5
Thüringer Rostbratwurst 5
Perth Pasties 5
Tourtière 5
Pâté chinois 5


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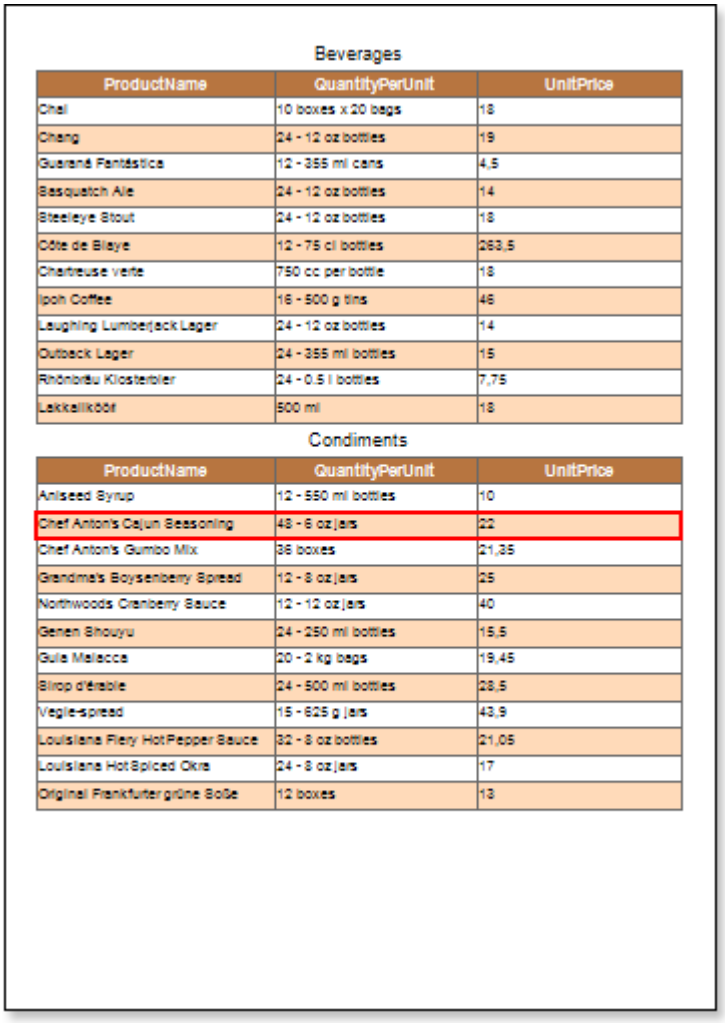

Beverages

| ProductName | QuantityPerUnit | UnitPrice |
|---|---|---|
| Chai | 10 boxes x 20 bags | 18 |
| Chang | 24 - 12 oz bottles | 19 |
| Guaraná Fantástica | 12 - 355 ml cans | 4,5 |
| Sasquatch Ale | 24 - 12 oz bottles | 14 |
| Steeleye Stout | 24 - 12 oz bottles | 18 |
| Côte de Blaye | 12 - 75 cl bottles | 263,5 |
| Chartreuse verte | 750 cc per bottle | 18 |
| Ipoh Coffee | 16 - 500 g tins | 46 |
| Laughing Lumberjack Lager | 24 - 12 oz bottles | 14 |
| Outback Lager | 24 - 355 ml bottles | 15 |
| Rhönbräu Klosterbier | 24 - 0.5 l bottles | 7,75 |
| Lakkalikööri | 500 ml | 18 |

Condiments

| ProductName | QuantityPerUnit | UnitPrice |
|---|---|---|
| Aniseed Syrup | 12 - 550 ml bottles | 10 |
| Chef Anton's Cajun Seasoning | 48 - 6 oz jars | 22 |
| Chef Anton's Gumbo Mix | 36 boxes | 21,35 |
| Grandma's Boysenberry Spread | 12 - 8 oz jars | 25 |
| Northwoods Cranberry Sauce | 12 - 12 oz jars | 40 |
| Genen Shouyu | 24 - 250 ml bottles | 15,5 |
| Gula Malacca | 20 - 2 kg bags | 19,45 |
| Sirop d'érable | 24 - 500 ml bottles | 28,5 |
| Vegie-spread | 15 - 625 g jars | 43,9 |
| Louisiana Fiery Hot Pepper Sauce | 32 - 8 oz bottles | 21,05 |
| Louisiana Hot Spiced Okra | 24 - 8 oz jars | 17 |
| Original Frankfurter grüne Soße | 12 boxes | 13 |

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# Part IV

# Report Designer

# 4. Report Designer

In this topic the basic knowledge of the report designer are represented. Basic elements, hotkeys and settings from code are described.

## 4.1. Standard UI and Ribbon UI

Different report designers support different UI's. The Standard mode uses toolbars as in Microsoft Office 2003. The Ribbon mode uses "ribbon tabs". Compatibility of designers and UI types is shown in the table below:

| UI type | Reports. NET | Reports. Wpf | Reports. Web | Reports.Silverlight |
|---|---|---|---|---|
| Standard (Microsoft Office 2003) | + | + | | |
| Ribbon (Microsoft Office 2007) | + | + | + | |
| Ribbon (Microsoft Office 2010) | | + | | + |

For **Stimulsoft Reports.Net** the UI type is offered to choose when first running the report designer. Also the UI type can be chosen in the **Gui** tab of the **Options** window of the report designer. The picture below shows the **Gui** tab of the **Options** window of the report designer:

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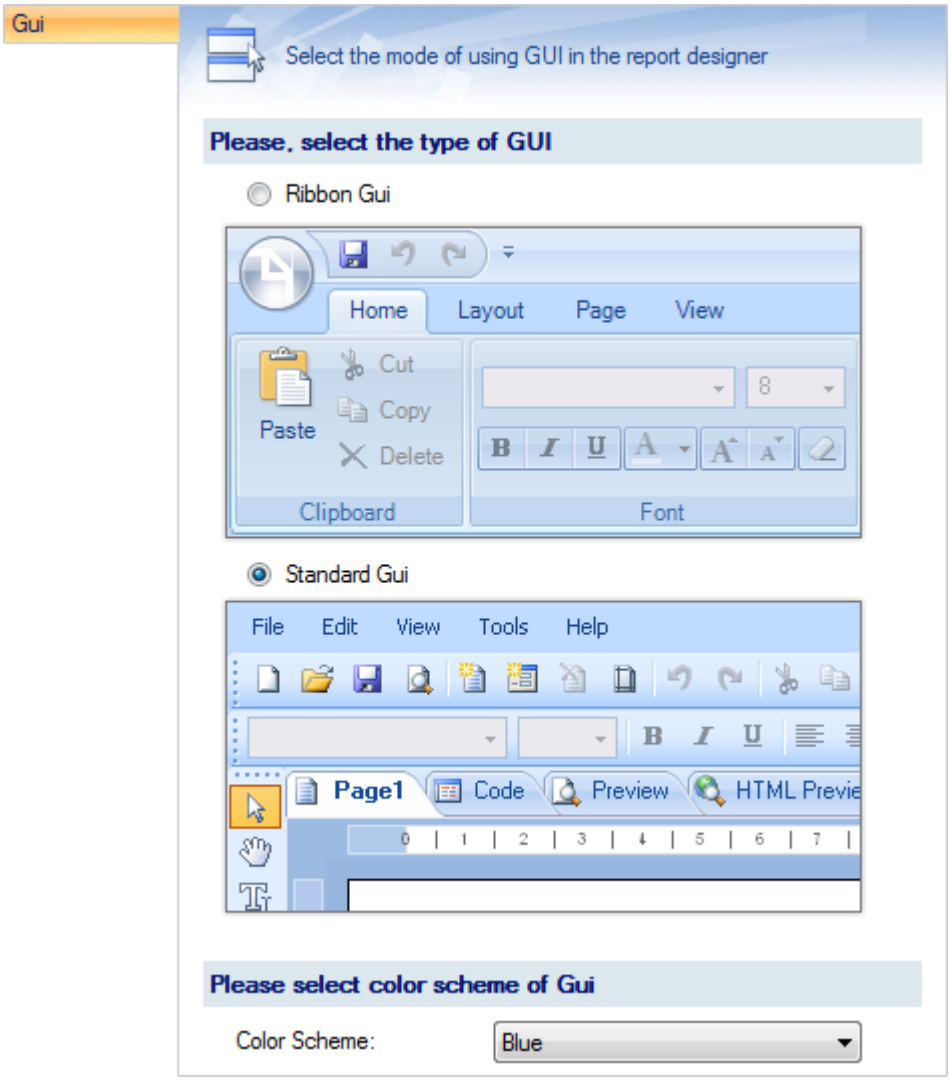


As seen on the picture, it is possible to choose either **Standard** or **Ribbon** UI. The color scheme of UI can also be changed. The following types of color themes are available: **Blue**, **Silver**, **Black**. The full path for invoking the **Options** window in the **Ribbon** UI: **Main Menu** -> **Options** button -> **Options** window. The full path for invoking the **Options** window in the **Standard** UI: **Tools** menu -> **Options** -> **Options** window. If you need to change the UI type before running the designer, then hold on the "**Ctrl**" button when loading the designer. The **Select the type of GUI** window will be invoked. The picture below shows **Select the type of GUI** window:

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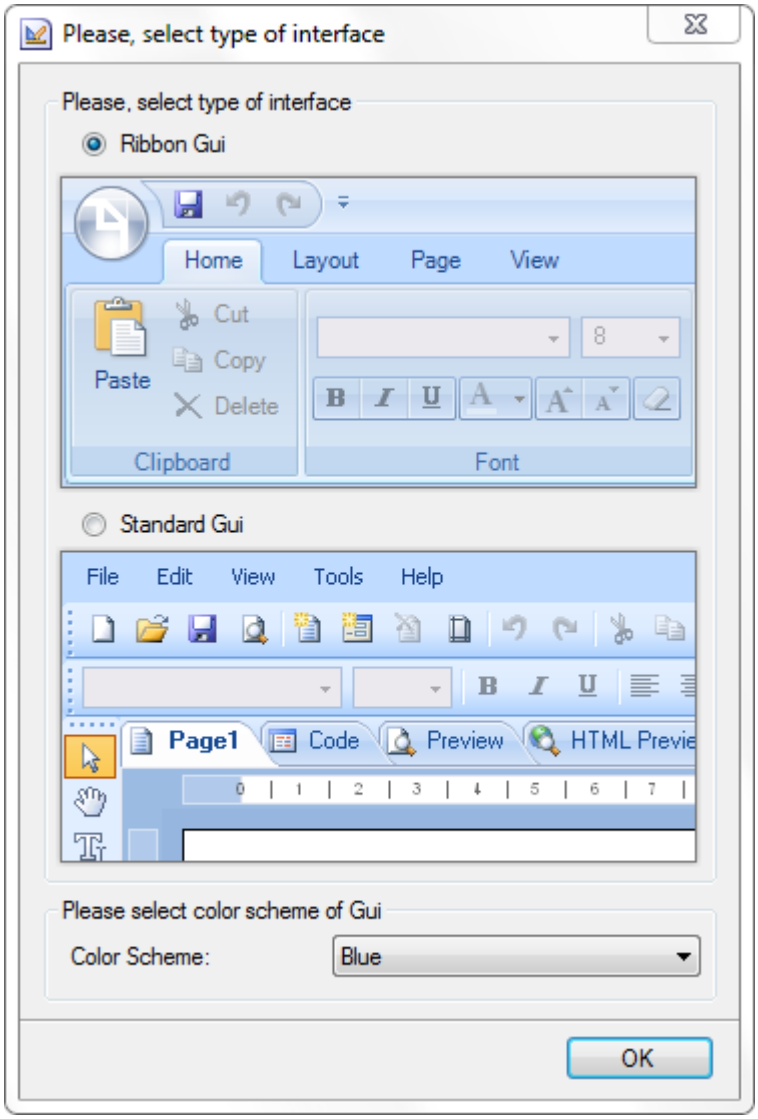


When **Stimulsoft Reports.Wpf** is run first the user will not see the **Select the type of GUI**. The designer will be loaded with the default **Ribbon 2010** UI **White** theme. To change the type of UI, it is necessary to call the **Options** window in the **Gui** tab and make changes. The picture below shows the **Gui** tab of the **Options** window with the color themes drop down list:

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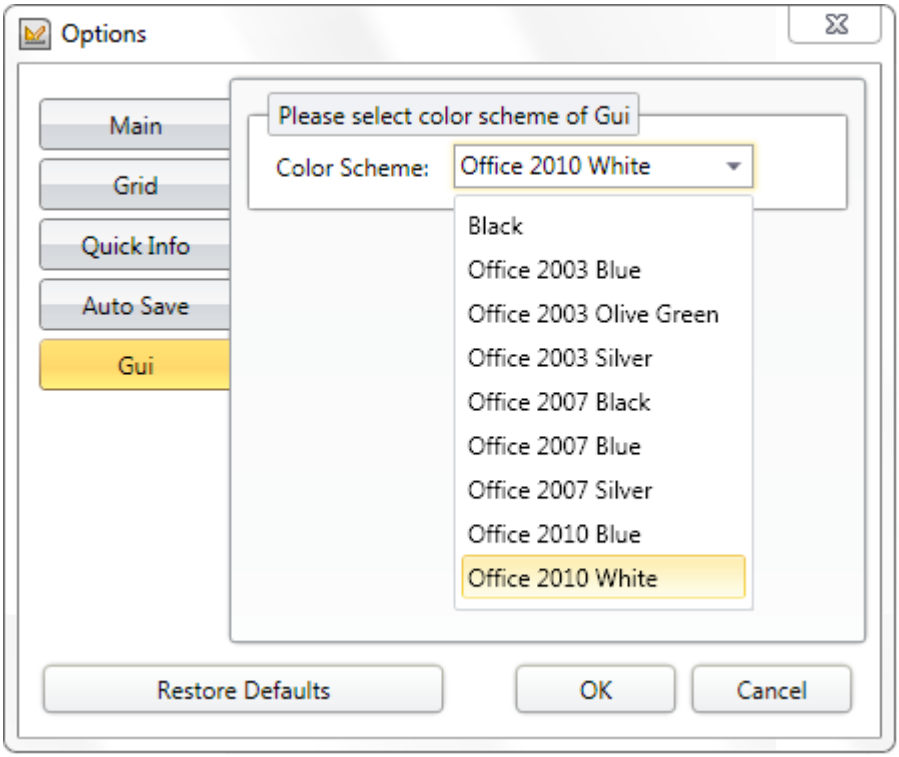


As seen on the picture, in **Stimulsoft Reports.Wpf**, it is impossible to separately change the UI typeand the color theme. A type of UI corresponds to a definite color theme. The full path for invoking the **Options** window in **Ribbon 2010** UI: **Main Menu** - **Options** - **Options** window. The full path for invoking the **Options** window in **Ribbon 2007** UI: **Main Menu** - **Options** button - **Options** window. The full path for invoking the **Options** window in **Standard** UI: **View** - **Options** - **Options** window.

**Stimulsoft Report.Web** supports **Ribbon 2007** UI **Blue** theme.

**Stimulsoft Report.Silverlight** supports **Ribbon 2010** UI **Blue** theme.

## 4.2. Standard UI

**Standard** Interface - a type of interface used in **Microsoft word 2003** and consists of a main menu and the set of toolbars.

### 4.2.1. Toolbar

**Toolbar** - is an element of a graphical user interface, intended for placing on it a few controls. Usually consists of a horizontal or vertical rectangle, which are grouped frequently used items.

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### 4.2.1.1. Standard Toolbar

The basic panel of the reports designer. The main element to control a report in the reports designer are placed on this panel. Besides, controls of basic parameters of the reports designer are placed on this panel.

1 Create a new report in the reports designer.
2 Open recently saved report.
3 Save a report.
4 Run the preview of a report in the window.
5 Add a new page to a report.
6 Add a new dialog form to the report.
7 Delete the current page or a dialog form in the report. If there is only one page of a report or a dialog form then this menu item is not active..
8 Call the Page Setup window of page settings. If the dialog form is the current then this menu item is not active.
9 Undo the recent action.
10 Redo the recent action.
11 Cut the selected components from the current page to the Clipboard.
12 Copy the selected components on the current page to the Clipboard.
13 Paste components from the Clipboard on the current page of a report.
14 Delete selected components on the current page.
15 Select all components on the current page.
16 Control showing a grid on a page.
17 Control automatic alignment of components by the grid.
18 Show/hide headers of bands.
19 Show/hide the order of placing components on a page.
20 Control Quick Info.
21 Show/hide rulers on a page.
22 Control zoom of a page in the reports designer.
23 Close the reports designer.

### 4.2.1.2. Borders Toolbar

The **Borders** panel is used to control borders of components.

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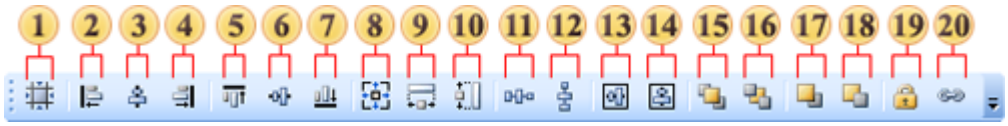
1. Set borders from all sides of a component.
2. Remove borders from all sides of a component.
3. Set the border from the top side of a component.
4. Set the border from the left side of a component.
5. Set the border from the right side of a component.
6. Set the border from the bottom side of a component.
7. Set the shadow of a component.
8. Background color of a component.
9. Border color of a component.
10. The type of the border line of a component.

### 4.2.1.3. Designer Toolbar

The **Design** toolbar is used to place components.




1. Align selected components to the grid of a page.
2. Align all selected components to their common left margin.
3. Align horizontally all selected components to their common center.
4. Align all selected components to their common right margin.
5. Align all selected components to their common top margin.
6. Align vertically all selected components to their common center.
7. Align all selected components to their common bottom margin.
8. Make the same size of components as the size of the first selected component.
9. Make the same width of components as the size of the first selected component.
10. Make the same height of components as the size of the first selected component.
11. Make horizontal spacing of selected components equal by their width.
12. Make vertical spacing of selected components equal by their height.
13. Center all selected components horizontally.
14. Center all selected components vertically.
15. Bring selected components to Front.
16. Send selected components to Back.
17. Move selected components on one level forward.
18. Move selected components on one level backward.
19. Control the Lock property.
20. Control the Link property.

### 4.2.1.4. Formatting Toolbar

The **Formatting** toolbar is used to output text with specified font type, color etc..

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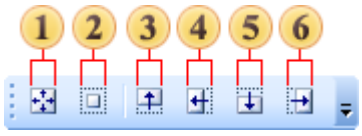
1. Select the font type of the selected components on the current page.
2. Select font size of the selected text components on the current page.
3. Set the Bold font style.
4. Set the Italic font style.
5. Set the Underlined font style.
6. Align left the content of a component.
7. Align center horizontally the content of a component.
8. Align right the content of a component.
9. Justify the content of a text component.
10. Align top the content of a component.
11. Align center vertically the content of a component.
12. Align bottom the content of a component.
13. The angle of the text rotation. This command can be applied only to the text component.
14. Select font color for selected components on the current page.
15. Open the Conditions Editor window for selected components.

### 4.2.1.5. Dock Style Toolbar

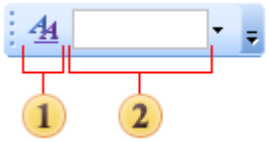
The **Dock style** toolbar is used to dock selected components.




1. Docks selected components to all edges.
2. Docks selected components to the left edge.
3. Docks selected components to the right edge.
4. Removes docking of selected components.
5. Docks selected components to the top edge.
6. Docks selected components to the bottom edge.

### 4.2.1.6. Styles Toolbar

The **Styles** toolbar is used to control styles in a report.

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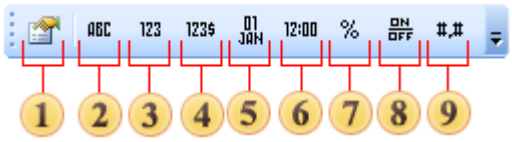
1. Opens the styles editor window.
2. A list of styles available in a report.

### 4.2.1.7. Text Format Toolbar

The **Text format editor** is used to quick text formatting.




1. Runs the text format editor.
2. Sets the text format to **Standard**.
3. Sets the text format to **Numerical**.
4. Sets the text format to **Currency**.
5. Sets the text format to **Date**.
6. Sets the text format to **Time**.
7. Sets the text format to **Percent**.
8. Sets the text format to **Boolean**.
9. Sets the text format to **Custom**.

### 4.2.1.8. Service Toolbar

The **Service** toolbar is used to call service functions.

1. Runs the **Data Store**.
2. Runs the **Page manager**.
3. Runs the **Service configurator**.

### 4.2.1.9. Status Bar in Standard UI

Status bar is placed under the designer window. The picture below shows a status bar of the **Standard** UI:

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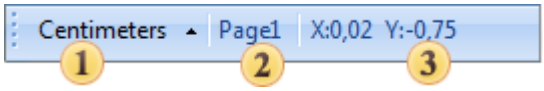


The bar contains 3 sections:
1 Units. This field shows current units in a report. It is possible to change them.
2 The field shows the currently selected component.
3 Shows cursor coordinates on a page of a report template. (X:0,0 ; Y:0,0) coordinates corresponds to the top left corner of a page of a report template.

## 4.2.2. Main Menu

The main menu of the Designer contains 5 submenus: **File, Edit, View, Tools, Help**. Each submenu contains common commands.

The **File** submenu contains the global commands for working with a report. The **Edit** submenu contains commands to work with Clipboard and stack of operation. The **View** submenu contains parameters of showing report in the Reports Designer. The **Tools** submenu contains commands of calling the service functions. The **Help** submenu contains information of the Reports Designer and web links on report generator resources in Web.

### 4.2.2.1. File Menu

The **File** submenu contains the global commands for working with a report.

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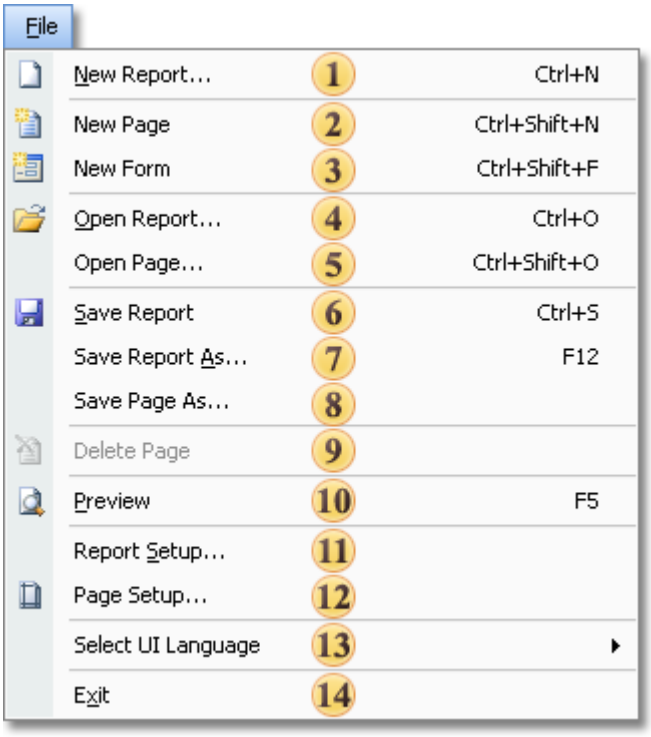


1 Create a new report in the report designer.
2 Add a new page to the report.
3 Add a new dialog page to the report.
4 Open the recently saved report.
5 Open the recently saved page of a report. The page will be added to the report after the last page of a report.
6 Save a report. If the report was not saved earlier then the **Save as...** menu item will be called.
7 Save a report to the specified folder.
8 Save the current page to the specified folder.
9 Delete the current page or a dialog form in the report. If there is only one page of a report or a dialog form then this menu item is not active.
10 Run the preview of a report in the window.
11 Call the Report Setup window of report options.
12 Call the Page Setup window of page settings. If the dialog form is the current then this menu item is not active.
13 Select UI localization language.
14 Close the Reports Designer.

### 4.2.2.2. Edit Menu

The **Edit** submenu contains commands to work with Clipboard and stack of operation.

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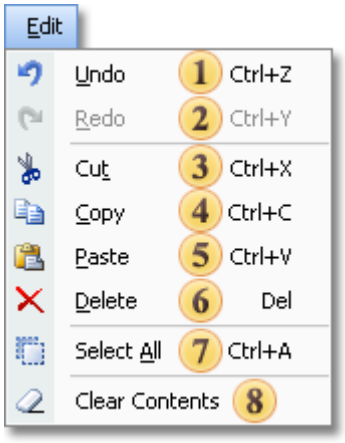


1. Undo the recent action.
2. Redo the recent action.
3. Cut the selected components from the current page to the Clipboard.
4. Copy the selected components on the current page to the Clipboard.
5. Paste components from the Clipboard on the current page of a report.
6. Delete selected components on the current page.
7. Select all components on the current page.
8. Clear the content of all selected components.

#### 4.2.2.3. View Menu

This menu contains controls of showing report pages in the reports designer, controls for panels, and controls for the toolbars of the reports designer.

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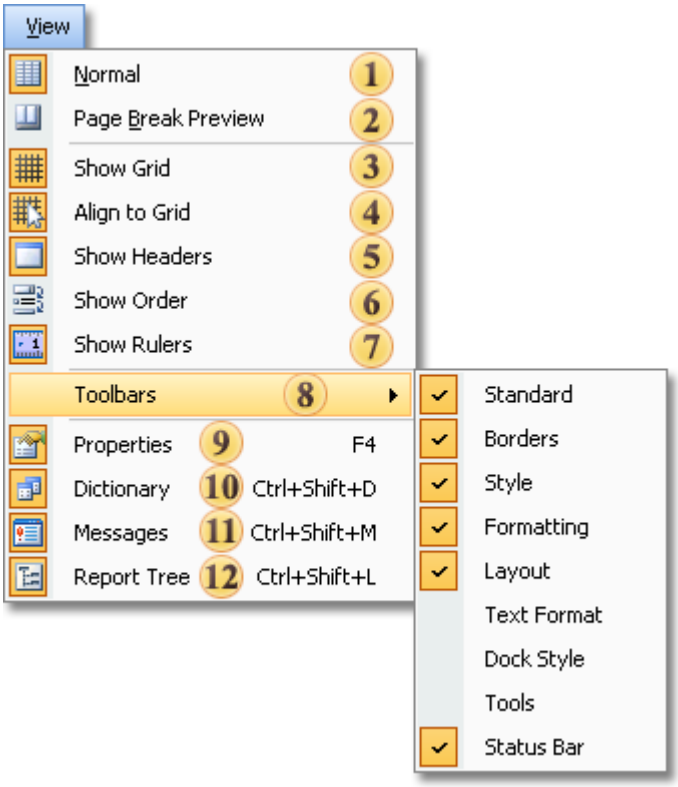


1. Standard mode of showing a page.
2. Page break preview (used only for segmented pages).
3. Control showing grid on a page.
4. Control automatic alignment of components by the grid.
5. Show/hide headers of bands.
6. Show/hide the order of placing components on a page.
7. Show/hide rulers on a page.
8. Control visibility of toolbars.
9. Control visibility of the **Properties** panel.
10. Control visibility of the **Dictionary** panel.
11. Control visibility of the **Messages** panel.
12. Control visibility of the **Report Tree** panel.

### 4.2.2.4. Tools Menu

The **Service** submenu contains items to call service functions.

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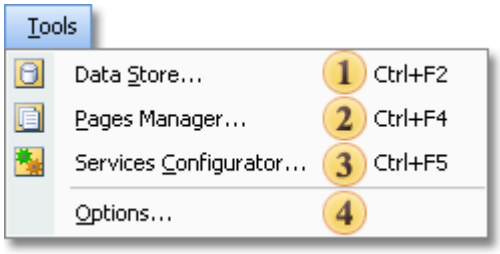
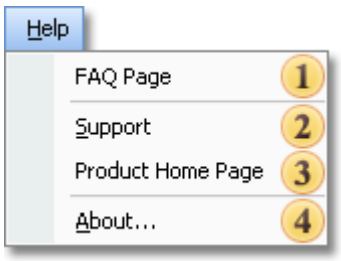



1. Runs the **Data Store**.
2. Runs the **Pages manager**.
3. Runs the **Services configurator**.

#### 4.2.2.5. Help Menu

The **Help** submenu contains information of the Reports Designer and web links on report generator resources in Web.




1. Runs in the Web browser the FAQ Page at Stimulsoft official site.
2. Runs in the Web browser the technical support web page.
3. Runs the product web page in the Web browser.
4. Shows the About box of the report designer.

## 4.3. Ribbon UI Mode 2007

**Ribbon** interface 2007, based on the tabs (similar to **Microsoft Office 2007**). The tabs are grouped instruments, thereby reducing the number of toolbars. Consider this type of interface in more detail.

### 4.3.1. Application Menu

The basis of the **Ribbon UI** mode is the **Ribbon** panel that is shown in the picture below:

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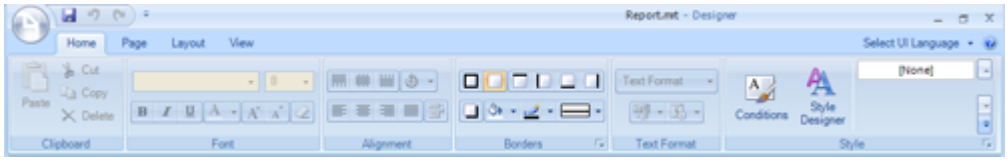
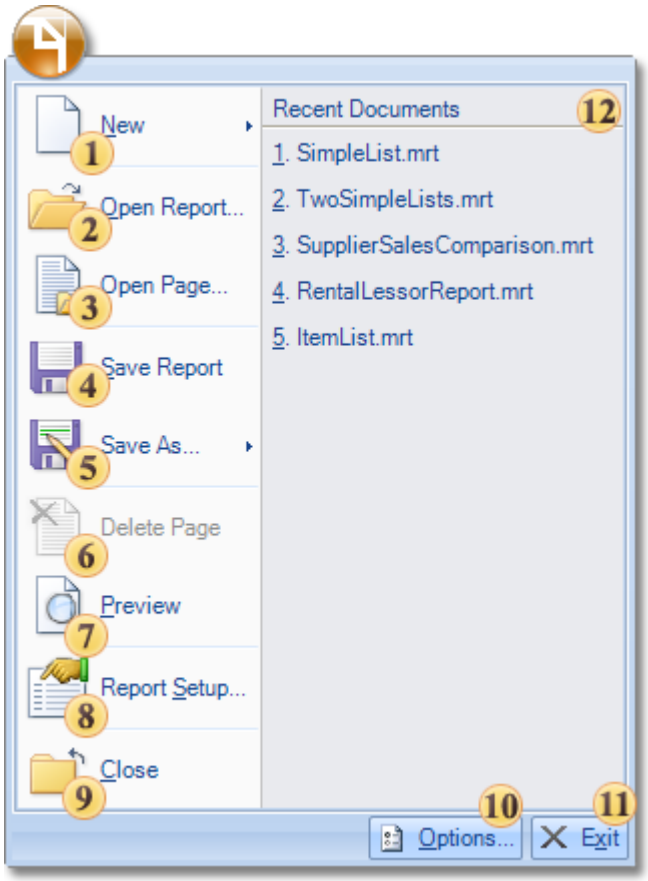


The main element of the **Ribbon UI** is the **Application Button** and menu that is called by clicking on this button. This is a main menu of the application. The is represented by basic commands used to work with reports in the reports designer. Elements of the application menu are shown on the picture below.




1 Create a new report or a new control in a report. It is possible to create a new report, a new page, a new form. The submenu of the New menu is shown in the picture below:

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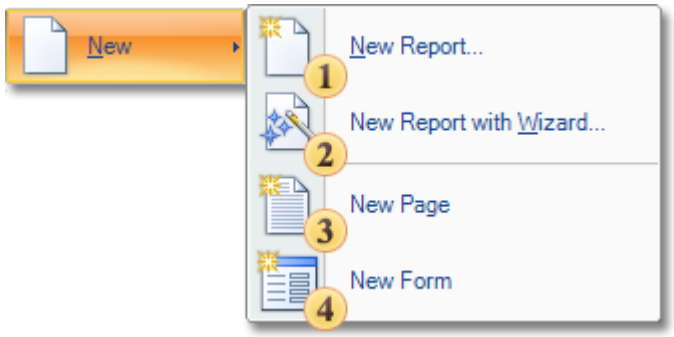
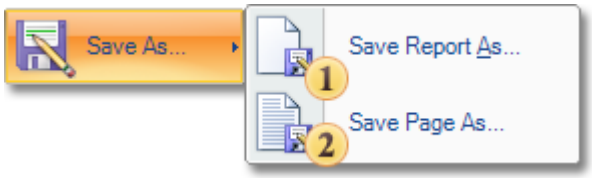



The first item of this submenu 1 creates an empty report in the report designer. The second item 2 creates a new report using the wizard. The third item 3 creates a new page. And the fourth item 4 creates a new dialog form.
2 Open recently saved report.
3 Open the recently saved page of a report. The page will be added to the report after the last page of a report.
4 Save a report. If the report was not saved earlier then the **Save as...** menu item will be called.
5 Save a report to the specified folder. This item contains submenu:




The first item saves a report to the specified folder. The first item saves a page of a report to the specified folder.
6 Delete the current page or a dialog form in the report. If there is only one page of a report or a dialog form then this menu item is not active.
7 Run the preview of a report in the window.
8 Call the Report Setup window of report options.
9 Close a report that is opened in the reports designer.
10 Call the report designer setup window.
11 Close the report designer.
12 This panel shows a list of recently opened reports. If to select one report in the list then it will be opened in the designer.

## 4.3.2. Ribbon Tabs

Tab is a part of the interface on which the toolbar. At the designer shows four tabs: **Home**, **Page**, **Layout**, **View**. Consider these tabs and the main instruments are located on them more.

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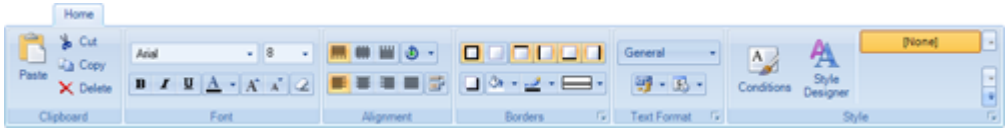
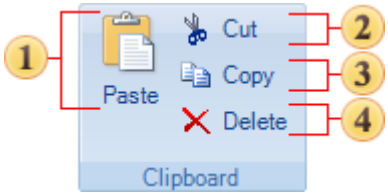
### 4.3.2.1. Home Tab

This is a basic tab of the report designer. Main commands of setting report components are placed on this tab.




#### 4.3.2.1.1 Clipboard Group.

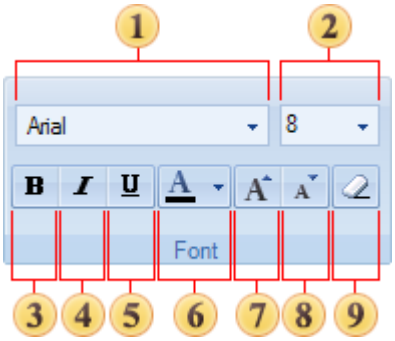
This group allows working with the Clipboard of the report designer.




1. Paste components from the Clipboard on the current page of a report.
2. Cut the selected components from the current page to the Clipboard.
3. Copy the selected components on the current page to the Clipboard.
4. Delete selected components on the current page.

#### 4.3.2.1.2 Font Group.

This group is used to output text with specified font type, color etc.




1. Select the font type of the text components on the current page.
2. Select font size of the text components on the current page.
3. Set the Bold font style.

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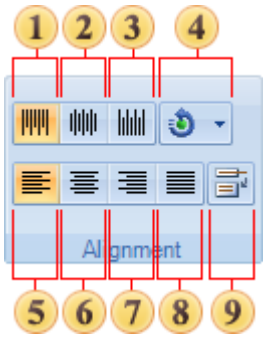
4. Set the Italic font style.
5. Set the Underlined font style.
6. Set the font color of the text components on the current page.
7. Increase the font size.
8. Decrease the font size.
9. Delete the content of all selected text components.

#### 4.3.2.1.3 Alignment Group.

The group is used to align the content of components horizontally and vertically. Also it is possible to set the angle of the text rotation and control the **WordWrap** property.




All commands are applied to selected components on the current page.

1. Align top the content of a component.
2. Align center vertically the content of a component.
3. Align bottom the content of a component.
4. The angle of the text rotation. This command can be applied only to the text component.
5. Align left the content of a component.
6. Align center horizontally the content of a component.
7. Align right the content of a component.
8. Justify the content of a text component.
9. Used for the WordWrap property of the text component.

#### 4.3.2.1.4 Borders Group.

This group contains the commands to setup border components.

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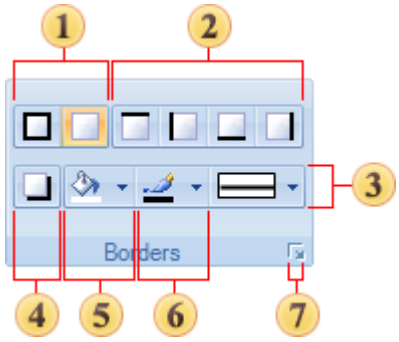
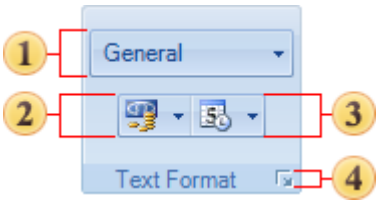



All commands can be applied to selected components on the current page.

1. Set or remove borders from all sides of a component.
2. Set or remove borders from each side of a component.
3. The type of the border line.
4. Set the shadow of a component.
5. Background color of a component.
6. Border color of a component.
7. Call the form of changing border parameters.

#### 4.3.2.1.5 Text Format Group.

The group to control text formatting.




1. Select text format.
2. Select symbols of currency.
3. Set one of the predefined formats to output a text.
4. Call a form of formats editing.

#### 4.3.2.1.6 Styles Group.

This group is used to control styles and conditions which are used to automatically design components in a report.

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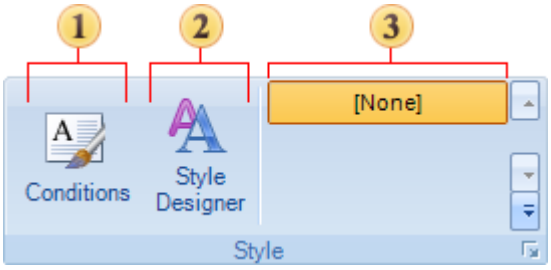
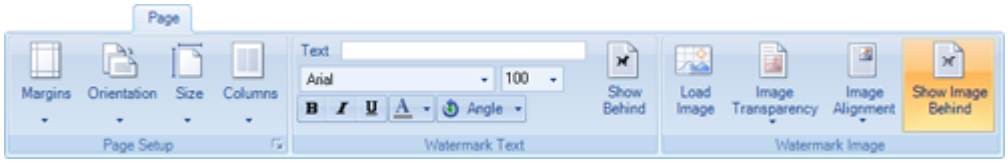



1. Open a window of the Conditions Editor for selected components.
2. Open a window of Styles Editor.
3. A gallery of styles in a report.

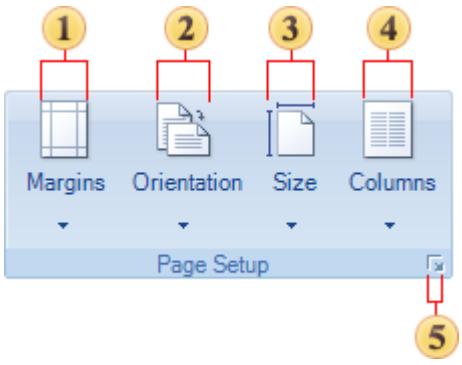
### 4.3.2.2. Page Tab

This tab is used to control page parameters.




#### 4.3.2.2.1 Page Setup Group.

This group contains elements to control basic parameters of a page. These are page margins, orientation, page size, columns.




Changes can be applied to the current page in the Reports Designer.

1. Select sizes of page margins.
2. Select Portrait or Landscape orientation of a page.
3. Select page size.

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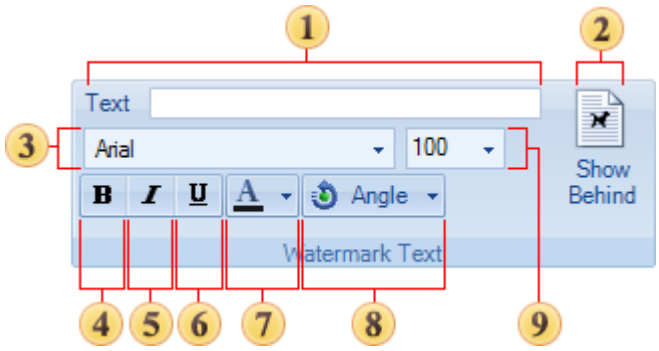
4 Select number of columns on a page.
5 Call the Page Setup dialog window.

#### 4.3.2.2.2 Watermark Text Group.

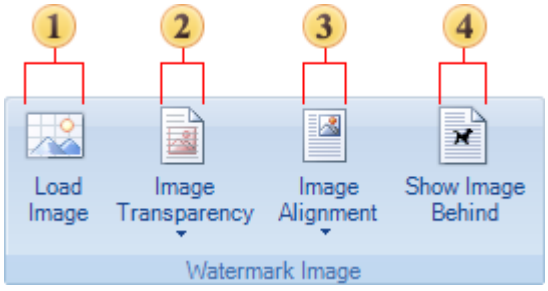
This group is used to control watermark text output.




1 Watermark text.
2 Show watermark text behind the components of a page.
3 Select a font type to output a text of the watermark.
4 Set the Bold font style of the watermark text.
5 Set the Italic font style of the watermark text.
6 Set the Underlined font style of the watermark text.
7 Watermark text color.
8 Set angle rotation of the watermark text.
9 Font size of the watermark text.

#### 4.3.2.2.3 Watermark Image Group.

This group is used to control the watermark image.




1 Load an image for the watermark.
2 Set transparency of the watermark image.
3 Align the watermark image.

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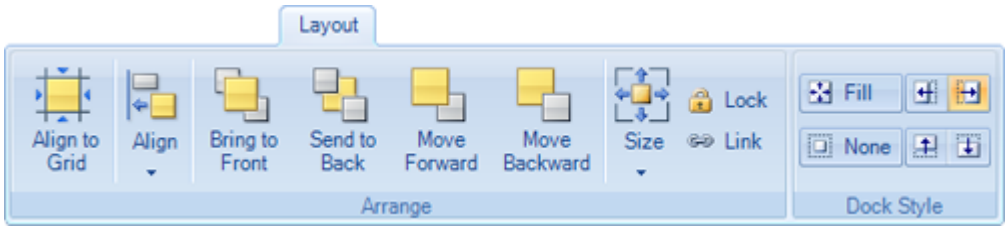
4 Show the watermark image behind page components on page.

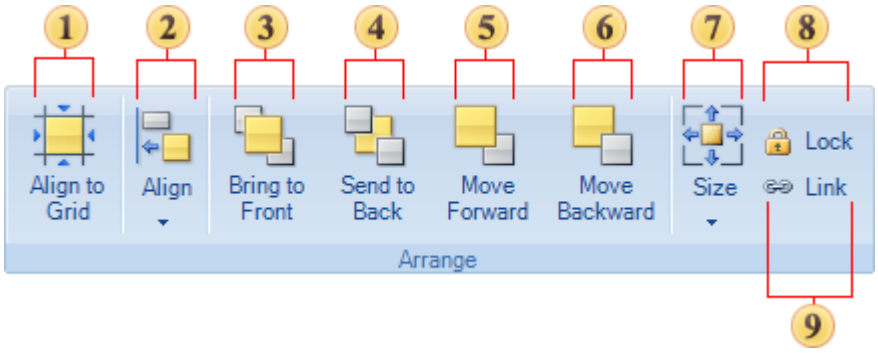
### 4.3.2.3. Layout Tab

This tab is used to control placing different components on a page and also to specify styles of docking components.




#### 4.3.2.3.1 Arrange Group.

The group contains a lot of commands to change position of components on a page. The picture below shows this group.




1 Align all selected components to the page grid.
2 Align selected components. This element contains submenu and short description in this topic below.
3 Bring selected components to Front.
4 Send selected components to Back.
5 Move selected components on one level forward.
6 Move selected components on one level backward.
7 Choose the size of selected components. It contains submenu and is described in this topic below.
8 Control the Lock property.
9 Control the Link property.

The description of the Align button, specified with number 2 on the picture above.

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1. Align all selected components to their common left margin.
2. Align horizontally all selected components to their common center.
3. Align all selected components to their common right margin.
4. Align all selected components to their common top margin.
5. Align vertically all selected components to their common center.
6. Align all selected components to their common bottom margin.
7. Make horizontal spacing of selected components equal by their width.
8. Make vertical spacing of selected components equal by their height.
9. Center all selected components horizontally.
10. Center all selected components vertically.

The description of the Size button, specified with number 7 on the topmost picture.

1. Make the same size of components as the size of the first selected component.
2. Make the same width of components as the size of the first selected component.
3. Make the same height of components as the size of the first selected component.

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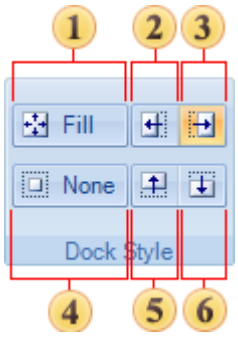
#### 4.3.2.3.2 Dock Style Group.

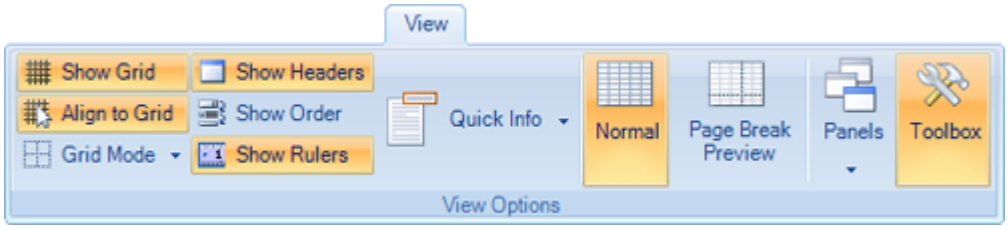
This group contains elements to set the dock style of selected components.




1. Dock selected components to all edges.
2. Dock selected components to the left edge.
3. Dock selected components to the right edge.
4. Removes dock style of selected components.
5. Dock selected components to the top edge.
6. Dock selected components to the bottom edge.

### 4.3.2.4. View Tab

This tab is used to control different options of working with report designer.




#### 4.3.2.4.1 View Options Group.

This group contains settings for different parameters of showing a report and working with the reports designer.

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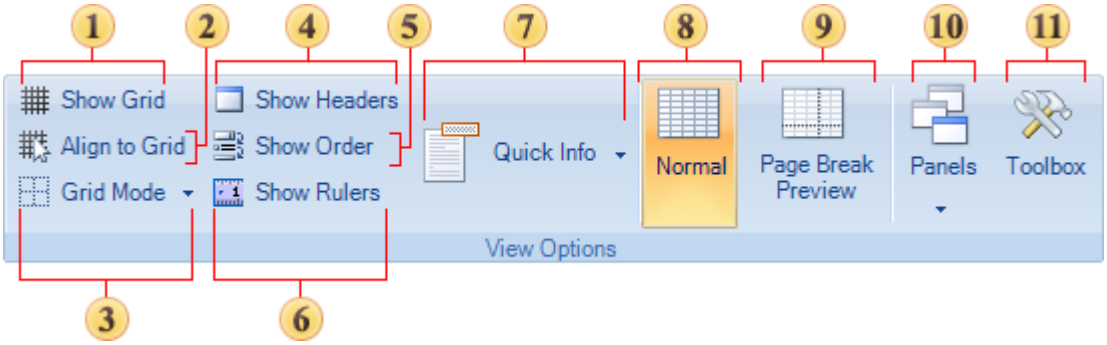


1. Control showing grid on a page.
2. Control automatic alignment of components by the grid.
3. Select grid type.
4. Show/hide headers of bands.
5. Show/hide the order of placing components on a page.
6. Show/hide rulers on a page.
7. Control Quick Info.
8. Standard mode of showing a page.
9. Page break preview (used only for segmented pages).
10. Control visible designer panels.
11. Show/hide Toolbox.

## 4.3.3. 2007 Status Bar

Status bar in 2007 **Ribbon** interface is located at the bottom of the designer. This is a panel on what controls are placed. The picture below shows a status bar Ribbon Interface:

This panel contains 4 fields:

1. Units. This field displays the units used in a report, and also allows you to change them.
2. This field displays the currently selected components. In this case, select a page "**Page 1**".
3. This field displays the coordinates of the cursor on the page template report. Moreover, the origin (X: 0,0 and Y: 0,0) coincides with the upper left corner of border crossing at the report template.
4. Control zoom of a report template page.

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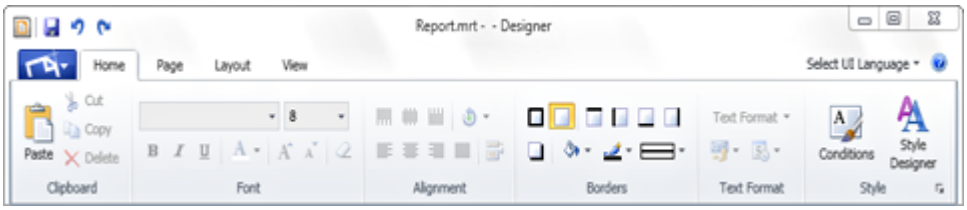
## 4.4. Ribbon UI 2010

**Ribbon** interface 2010, based on the tabs (similar to **Microsoft Office 2010**). The tabs are grouped instruments, thereby reducing the number of toolbars. Consider this type of interface in more detail.

### 4.4.1. Main Menu

The basic **Ribbon** 2010 interface is a **Ribbon** 2010 panel. The picture below shows how it looks like:




The main element of the **Ribbon** panel is the **Application Button** and the menu that is called by pressing this button. This is a main menu of the report designer. Basic commands for work with reports in the report designer are represented in the menu. The picture below shows a menu of the application and its items.

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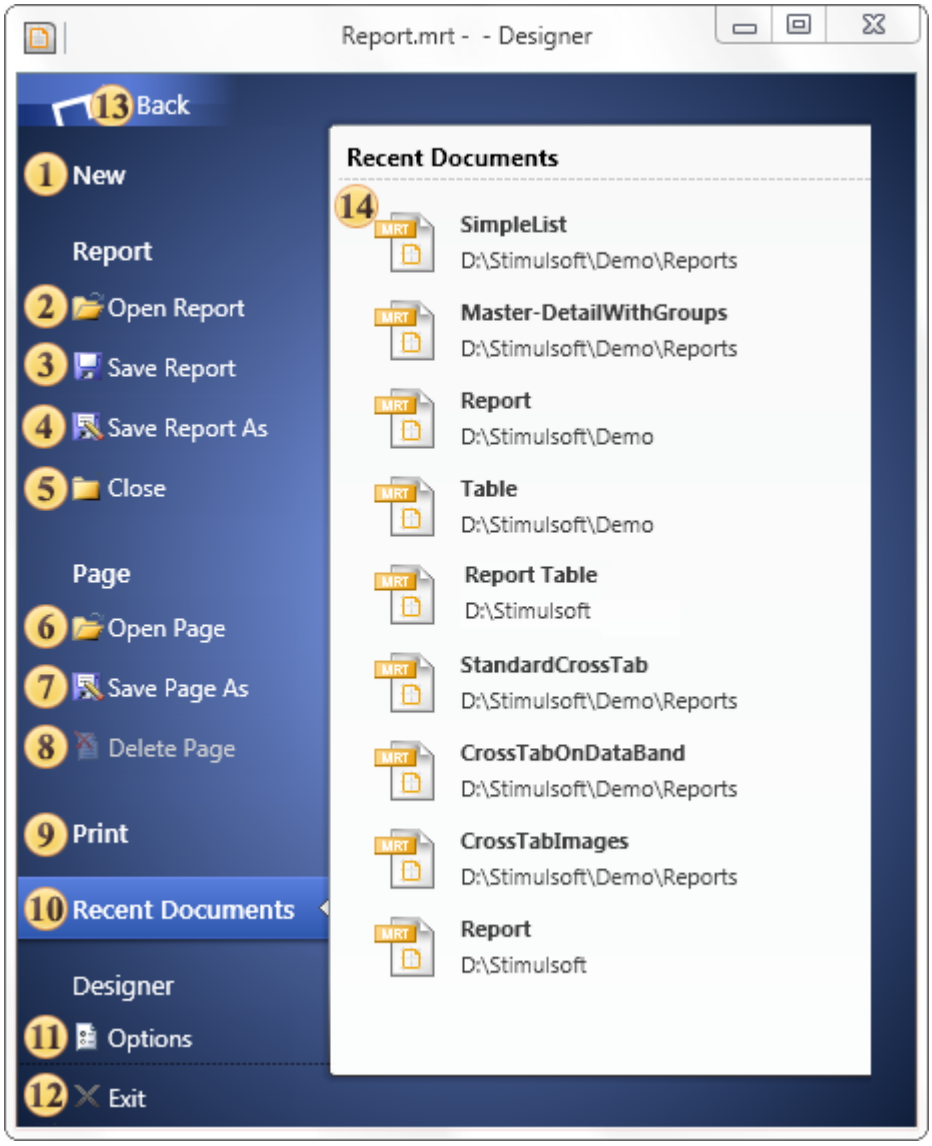


The **Ribbon** menu of the 2010 interface is split on 6 group: **New** group, **Report** group, **Page** group, **Print** group, **Recent Documents** group and **Designer** group. The first group is represented by one of the main menu items:

1 The **New** menu item contains submenu where a list of new report components is available for creation is shown.

The second group from 2 to 5 is a set of items to report control:

2 The **Open Report** menu item. When calling this menu item, a dialog for opening a report will appear.

3 The **Save Report** menu item saves changes in a report. If a report was not changed previously, then the **Save Report As** menu item will be called automatically.

4 The **Save Report As** menu item. When calling this menu item, a dialog for saving a report will appear.

5 The **Close** menu item closes a report.

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The second group from 6 to 8 is a set of items to control report pages:
6 The **Open Page** menu item. When calling this menu item, a dialog for opening a page will appear.
7 The **Save Page As** menu item. When calling this menu item, a dialog for selecting place for saving a current page.
8 The **Delete Page** menu item. When calling this menu item, a dialog for deleting a page or form will appear.

The next menu items from 9 to 10 represents separate group:
9 The **Print** menu item contains submenu where a list of commands for report printing is shown.
10 The **Recent Documents** menu item contains submenu where recently opened reports are shown.

The last group from 11 to 12 represents a group of items to control designer:
11 The **Options** menu item calls a window for designer parameters settings.
12 The **Exit** button closes a report designer.

13 The **Back** button rolls out the designer menu.
14 The panel shows a submenu of selected menu item or selected group.

#### 4.4.1.1. Report Group

The **Report** group is a set of commands to control a report. The picture below shows the submenu of the **Report** group:

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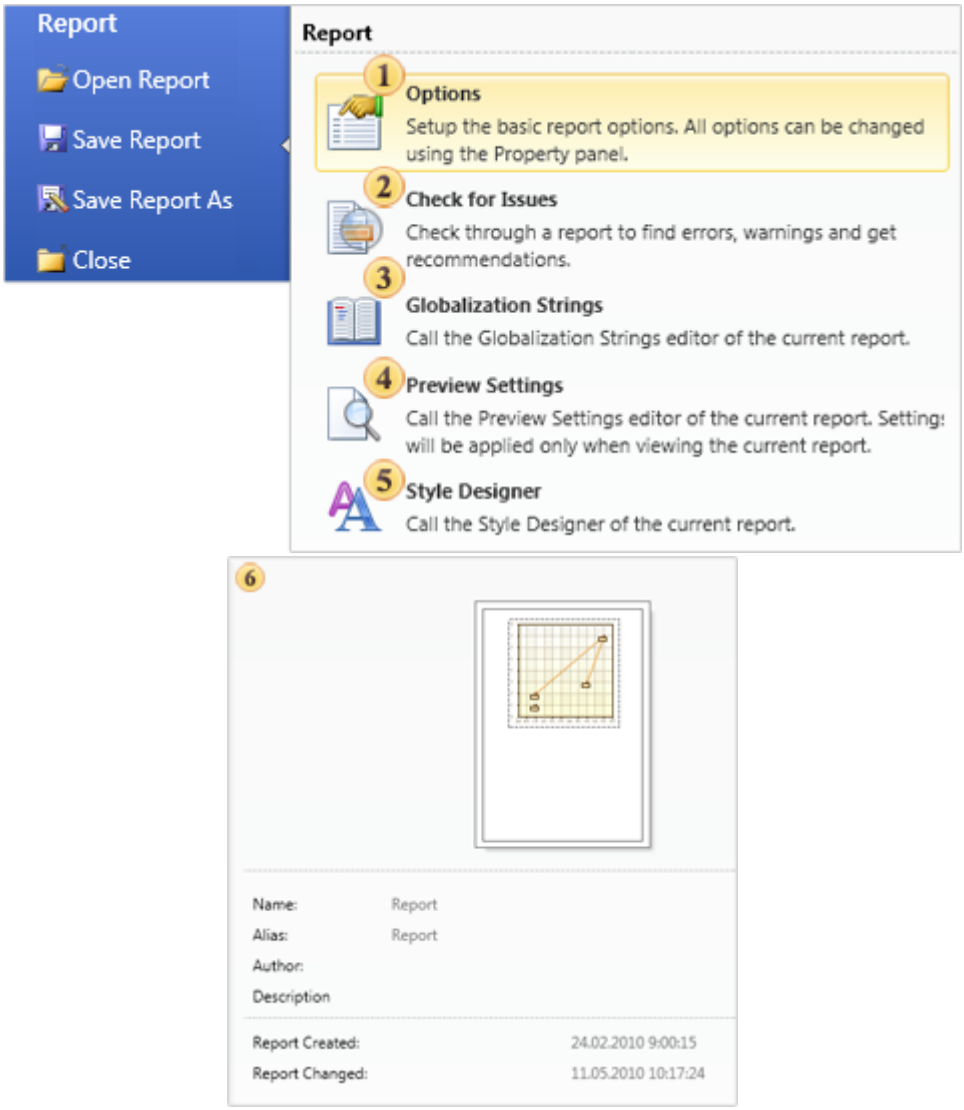


1 The **Options** submenu item calls the **Report Setup** window, in what it is possible to change the basic report options.
2 The **Check for Issues** submenu item calls the **Report Checker** window in what it is possible to get information about errors, warnings, messages regarding the report.
3 The **Globalization Strings** submenu item calls the **Globalization Editor**, using what, it is possible to localize a report to other cultures.
4 The **Preview Settings** submenu item calls the **Page Settings** window of the preview.
5 The **Style Designer** submenu item calls the style editor where it is possible to edit report styles.
6 The **Preview Panel** shows a reduced copy of a report template, and also shows an information about a report.

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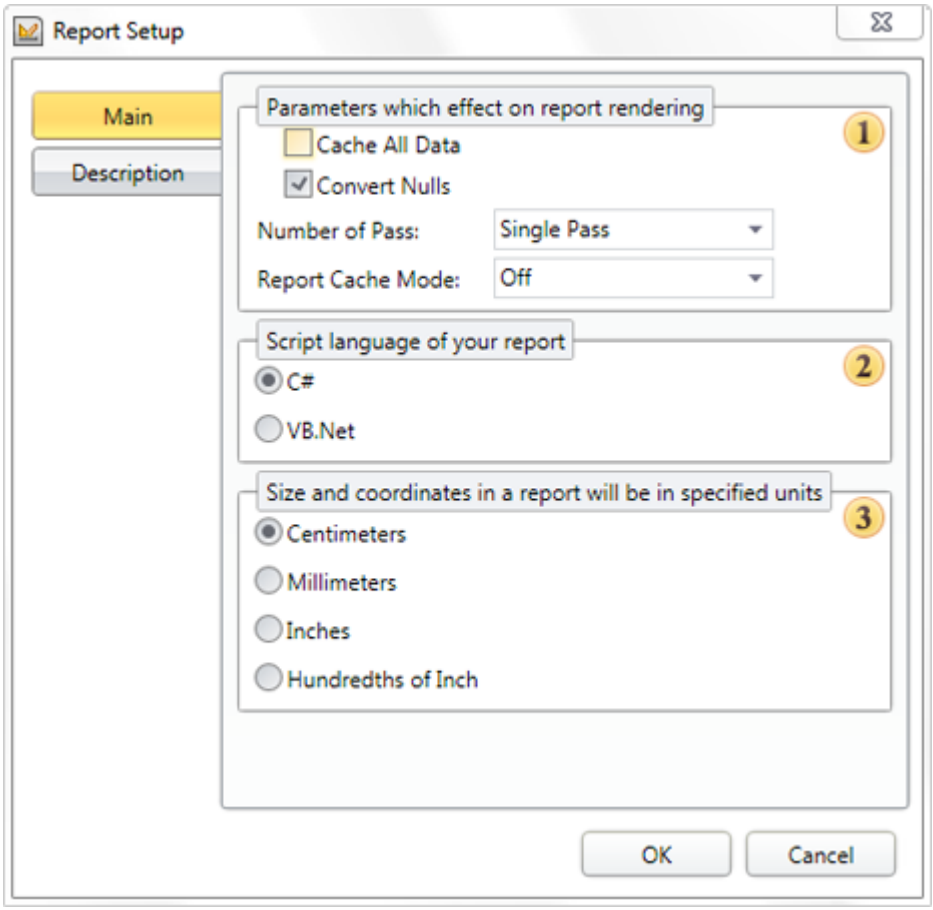
#### 4.4.1.1.1 Report Setup Window.

If to select the **Options** item in the submenu of the **Report** group, then the **Report Setup** window is invoked that allows you to identify the basic information and report parameters. The picture below shows the **Report Setup** window:




As can be seen from the picture above, the editor of the report parameters contains two tabs: **Main** and **Description**. The **Main** tab is represented by three groups, which define the most important parameters of the report:

1. In this group, basic parameters that affect the designing of the report are defined.
2. This group defines a scripting language of a report. You may switch between C # and VB.NET.
3. In this group you may select units of the report.

The **Description** tab defines information of report parameters. The picture below shows the **Description** tab:

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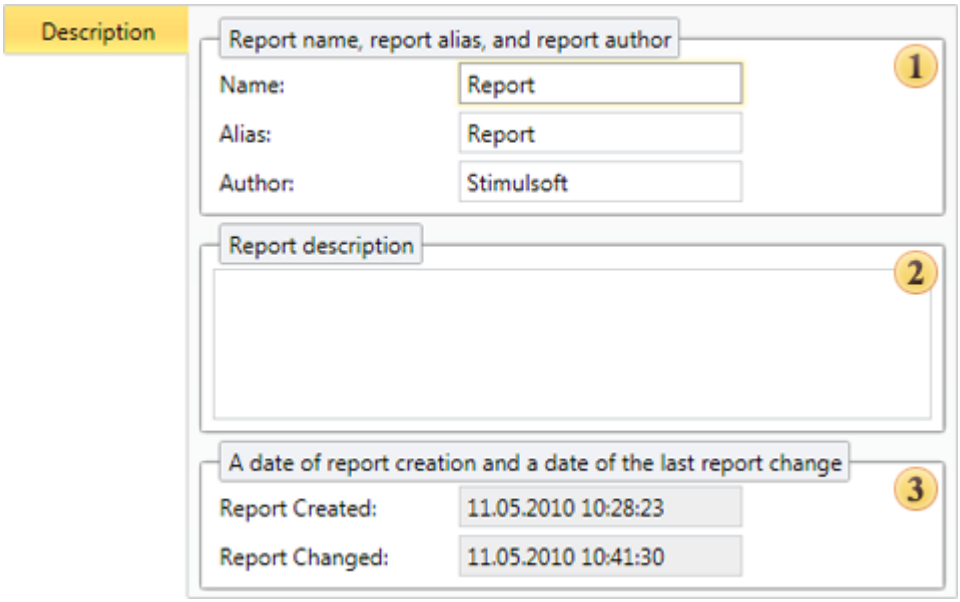


As can be seen from the picture above, the **Description** tab is represented by three groups:
1 A group of names. In this group the **Name**) and **Alias** of a report are specified, as well as the **Author's** name of the report.
2 A group of the report description. In this group the report description is defined.
3 This group is not available for editing and displays temporary information: when the report was created **(Report Created)** and the date of last modification of the report **Report Changed**.

#### 4.4.1.1.2 Report Checker Window.

In order to check the report for errors you should use the **Report Checker**. The **Report Checker** will analyze the report, resulting in an error message, comments, or inaccuracies found in this report. The picture below shows the **Report Checker**:

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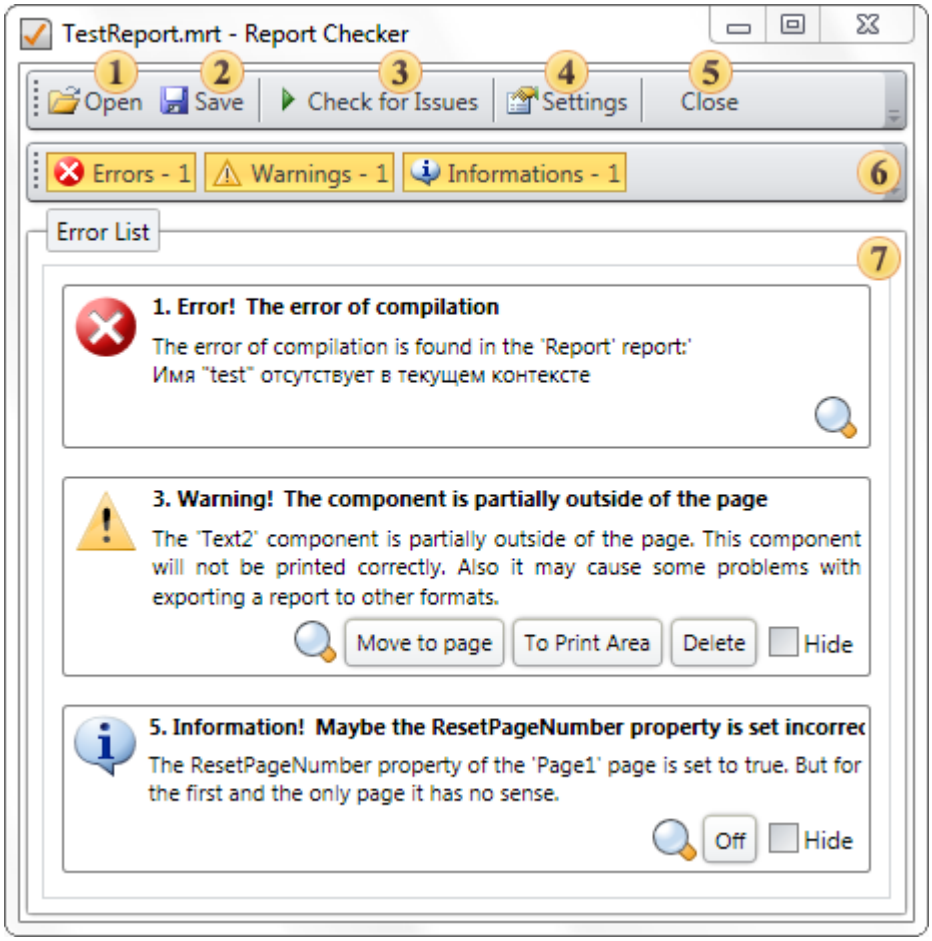


1 The **Open** button. Clicking this button, the user will see a dialog box to select a previously saved report and loading it to the **Report Checker**.
2 The **Save** button saves changes in the report, that was opened in the **Report Checker**.
3 The **Check for Issues** button starts the process of checking the report.
4 The **Settings** button opens the window of settings of the **Report Checker**. The picture below shows the **Settings** window:

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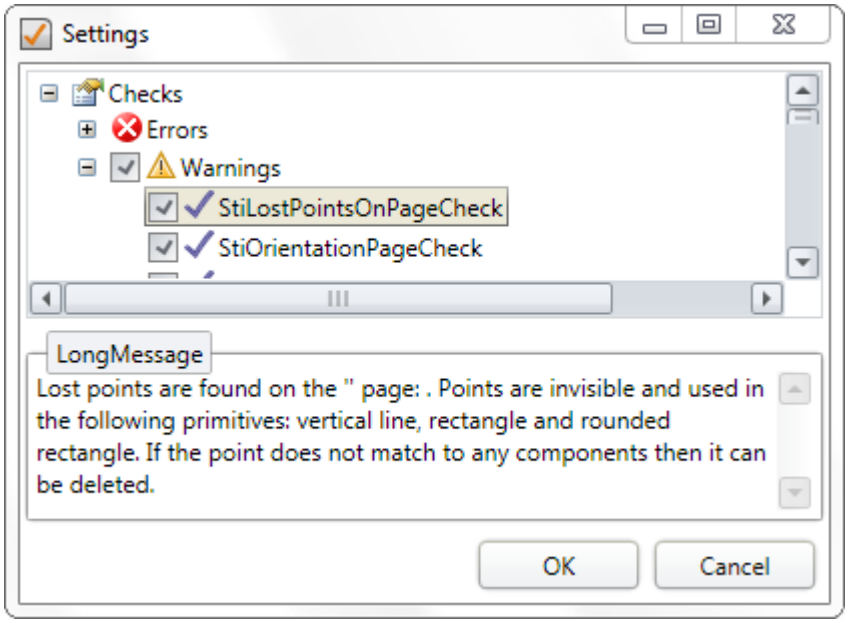


In this window, you can mark messages and warnings you want notifications to be displayed.
5 The **Close** button closes the window of the **Report Checker**.
6 The panel for showing messages.
7 The panel for showing descriptions of **Errors**, **Warnings**, **Informations**.

#### 4.4.1.1.3 Globalization Editor.

The **Globalization Editor** is in the report designer. This editor allows you to locate the report in several languages. If the value of the **AutoLocalizeReportonRun** property is set to **Yes**, then, when rendering a report, the report generator checks the culture of the installed operating system. Following the culture of the installed system, the reporting tool will check the presence of this culture in the list of cultures used in the report. And if t it found identical culture, it will substitute all the expressions in the report. As a result, the report will be localized in the culture of the operating system, according to certain parameters in the **Globalization Editor**. If the culture of your operating system is not in the list of cultures used in the report, then, when rendering a report, it will not be localized. If the **AutoLocalizeReportonRun** property is set to **No**, then autolocalization will not start. The picture below shows the **Globalization Editor** window:

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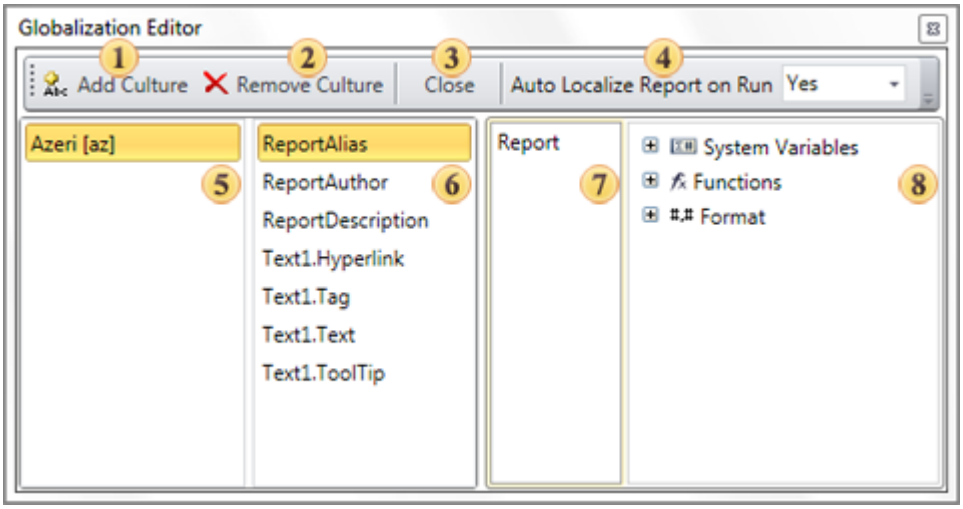


1 The **Add Culture** button calls a list of cultures.
2 The **Remove Culture** button removes the selected culture.
3 The **Close** button closes the editor window
4 The **AutoLocalizeReportonRun** property is used to enable/disable automatic localization when starting report rendering. If the **AutoLocalizeReportonRun** property is set to **Yes**, automatic localization will be done. If the **AutoLocalizeReportonRun** property is set to **No**, automatic localization will not start.
5 A list of cultures used in this report.
6 A list of components for localization.
7 Translation of the contents of the selected component.
8 A list of system variables, functions, formats of the report designer.

### 4.4.1.2. Page Group

The **Page** group contains commands to control the current page. The picture below shows the **Page** group submenu:

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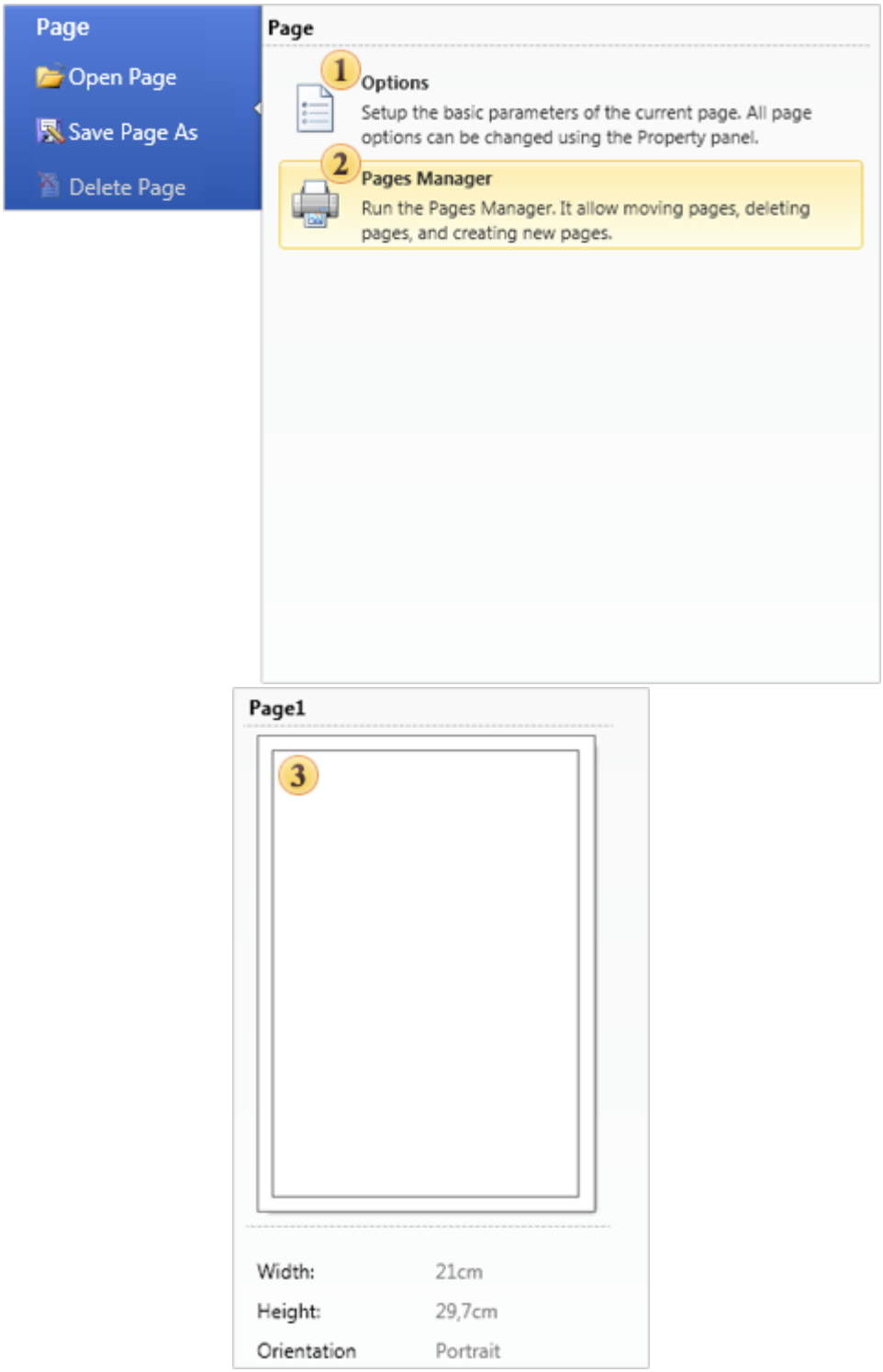


1 The **Options** submenu item calls the **Page Setup** window, where one may specify basic options of a page.
2 The **Pages Manager** submenu item calls the **Pages Manager** window where one may control report pages (create, remove, and move them).
3 The **Preview Panel** shows a scaled-down preview of a selected page of a report template and

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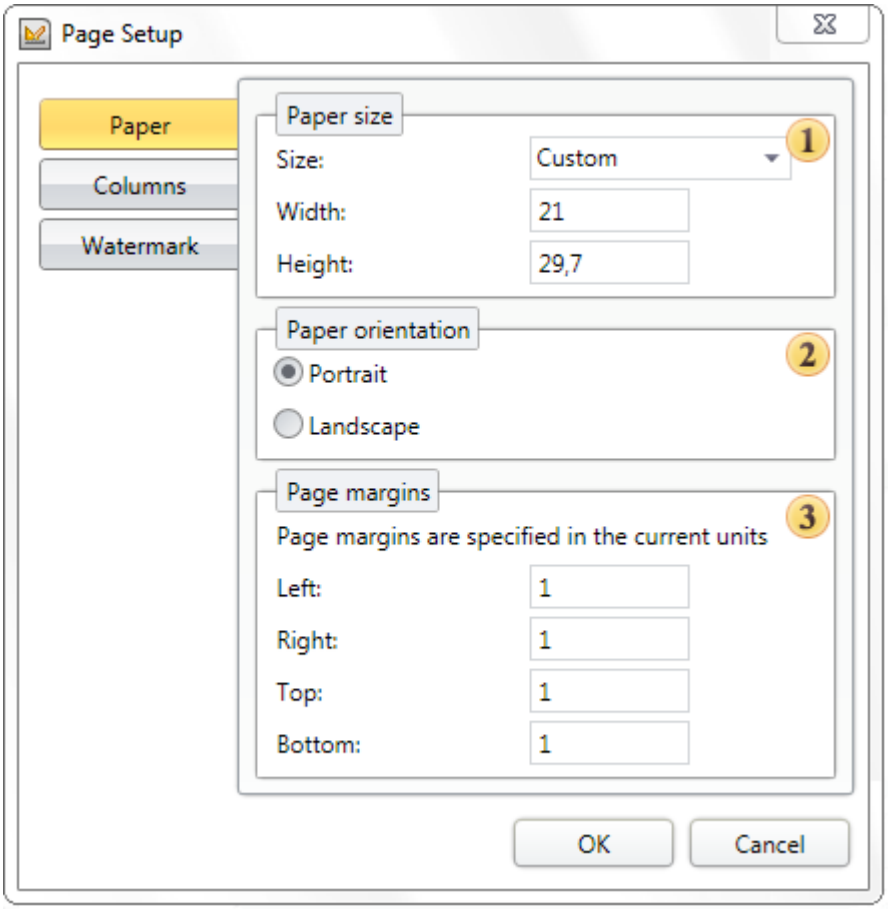
contains information about page: page **Width**, **Height**, and **Orientation**.

#### 4.4.1.2.1 Page Setup Window.

If to select the **Options** item in the submenu of the **Page** group, then the **Page Setup** window is invoked that allows you to identify the basic information and report parameters. The picture below shows the **Page Setup** window




As can be seen from the picture above, the editor of the page parameters contains three tabs: **Paper**, **Columns**, **Watermark**. The **Paper** tab consists of three groups, which define the basic page settings:

1 The **Size** group. This group contains three parameters: page **Size**, **Width**, and **Height**.

2 The **Orientation** group. In this group page orientation options are defined: **Portrait** or **Landscape**.

3 The **Borders** group. In this group the following parameters of **Margins** are defined: **Left**, **Right**, **Top**, and **Bottom** paddings.

The **Columns** tab defines the parameters of columns on a page. The picture below shows the **Columns** tab of the PageSetup editor:

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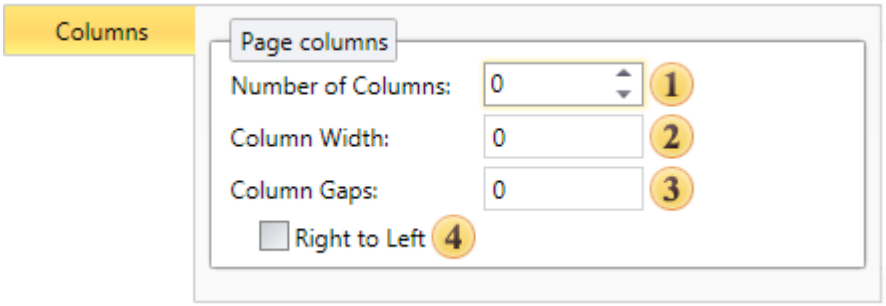


As can be seen on the picture above the **Columns** tab contains a group of parameters:
1 **Number of Columns** on the page. Any positive number will be the number of columns. A value of 0 is equal to one column on a page.
2 **Column Width**. The value of this parameter will be the width of the column. If the value is equal to 0, the column width will be determined automatically: page width divided by the number of columns. This value is indicated in units of the report.
3 **Column Gaps** is the distance between two columns. The value is indicated in units of the report.
4 **Right to left** enables/disables the mode of arrangement of columns on the page from right to left. By default, columns are arranged from left to right.

The **Watermark** tab defines the watermark options on the page. The picture below shows the **Watermark** tab of the PageSetup editor:

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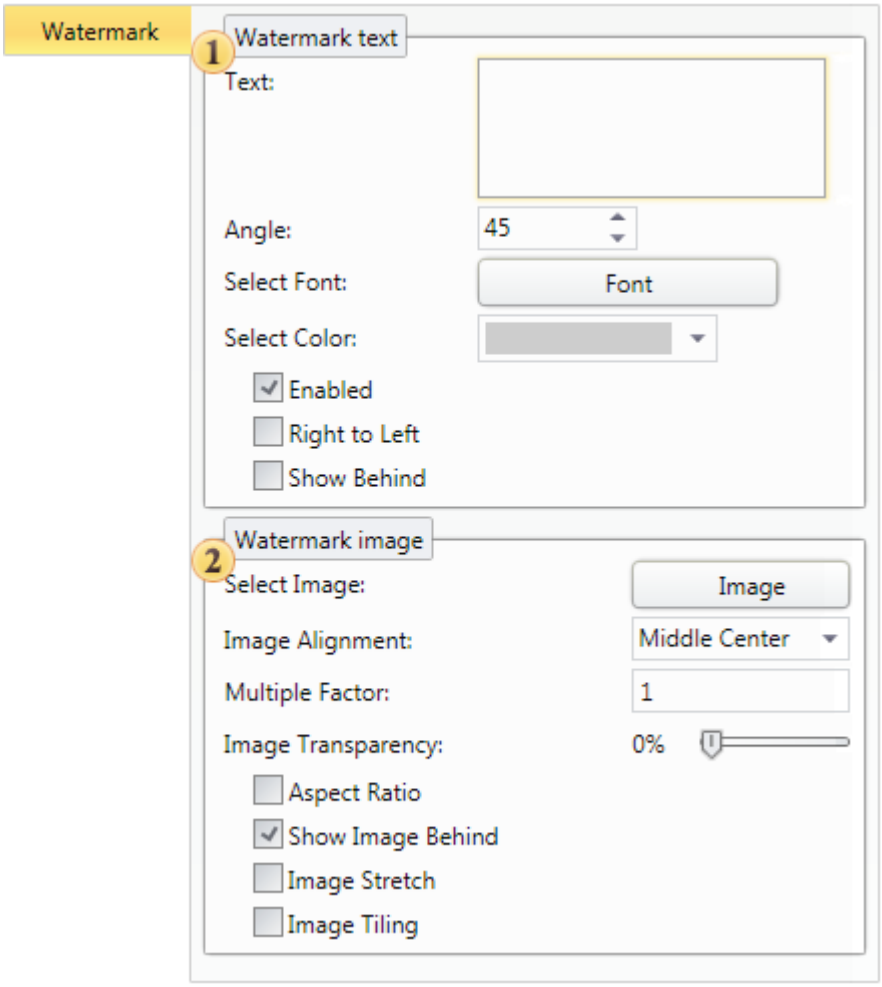


As can be seen from the picture above, the **Watermark** tab contains two groups of parameters:
1 **Watermark text group**. In this group there are options of a watermark that relate to its text part: text (**Text**) is a typed text of the watermark; rotation angle of the text (**Angle**), the font type (**Select Font**) text; text color (**Select Color**); **Enabled** enables/disables the watermark, right to left (**Right to left**) mode of the text layout, display behind (**Show Behind**) is the location of the text in the background.
2 **Watermark image** group. In this group there are options of the watermark, such as: **Select Image** that opens the image loader; **Image Alignment** aligns images according to the selected value; **Multiple Factor** sets zoom of the displayed image relative to loaded one; **Image Transparency; Aspect Radio** retains the proportions of the image; **Show Image Behind** shows the image behind the text; **Image Stretch** stretches the image on the report page; **Image Tiling**, if the picture is less than a page, it can be tiled.

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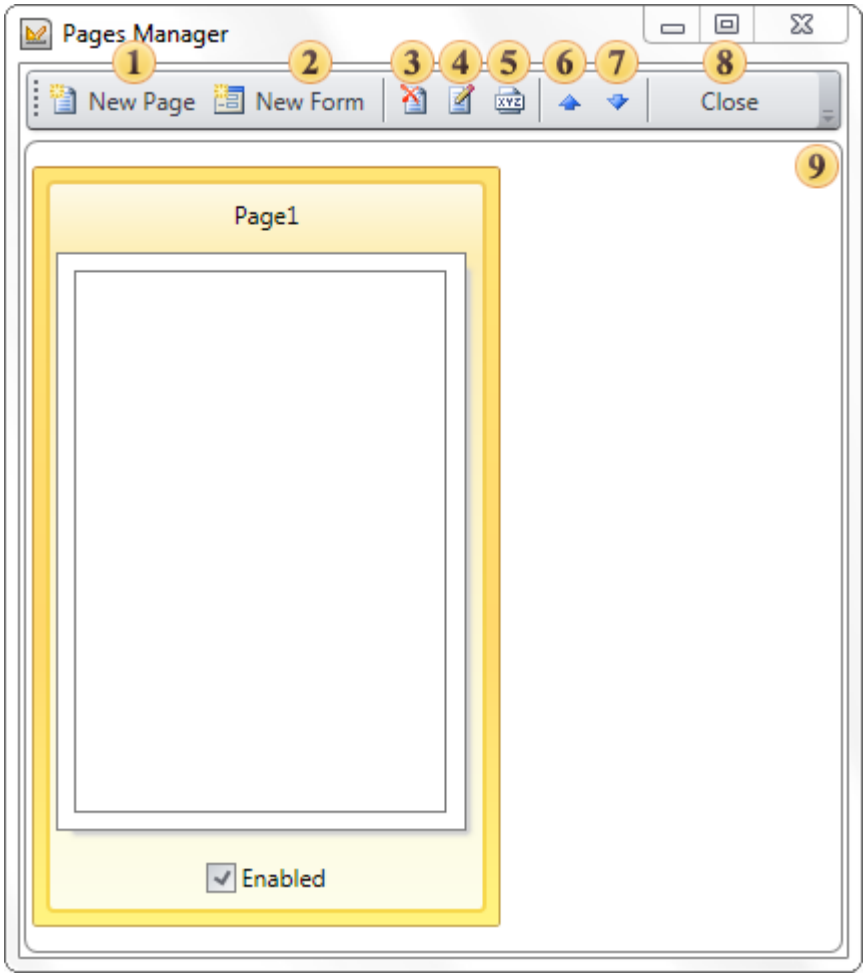
#### 4.4.1.2.2 Pages Manager.

The **Pages Manager** is used to control pages of a report. With this manager it is possible to create, delete pages and forms of a report. The picture below shows the window of a **Pages Manager**:




1 The **New Page** button creates a new page in a report.
2 The **New Form** button creates a new form in a report.
3 The **Delete Page** button deletes selected page or a form.
4 The **Page Setup** button calls the **Page Setup** window.
5 The **Rename** button calls the **Rename** window, where one may change a name of a page or form.
6 The **Up** button is used to move cursor on top or left.
7 The **Down** button is used to move cursor to bottom or right.
8 The **Close** button closes pages manager.
9 View panel. Shows all pages and report forms.

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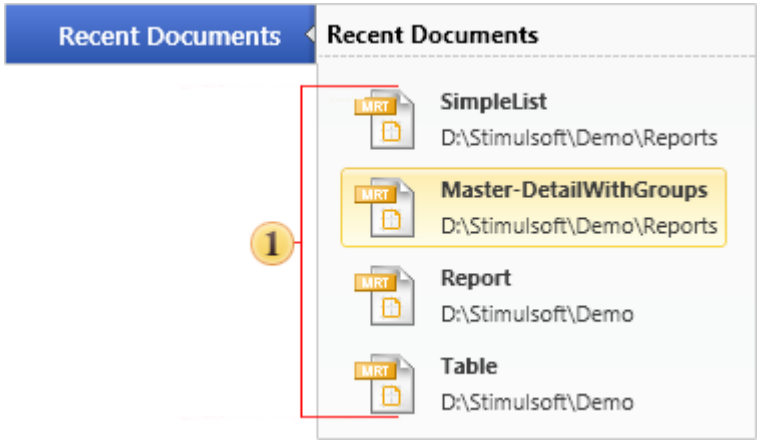
#### 4.4.1.3. Recent Documents Group

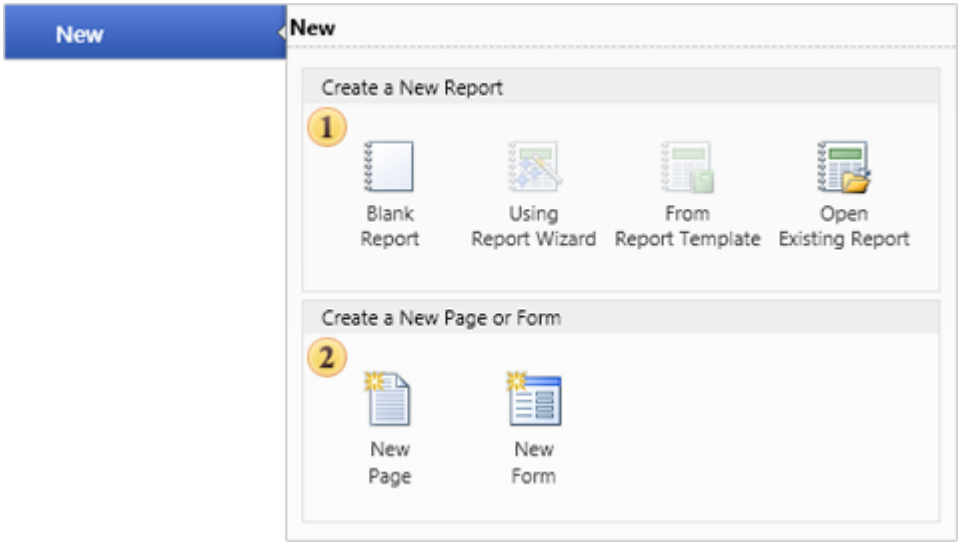
The **Recent Documents** group contains a list of recently loaded documents in the designer. The picture below shows the submenu of the **Recent Documents** group:




1 The list of recently opened documents.

#### 4.4.1.4. New Group

The **New** group contains a submenu with options of creating reports or forms.




As seen from the picture above the **New** group submenu contains two fields:
1 In this field the way of creating reports are shown. There are **Blank Report**, **Using Report Wizard**, **From Report Template**, **Open Existing Report**.
2 In this field the components available for creating are displayed. These are **New Page**, **New**

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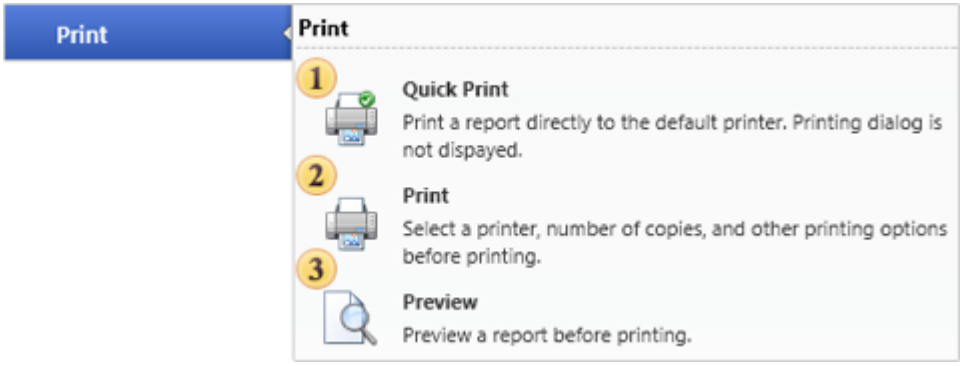
**Form**.

### 4.4.1.5. Print Group

The **Print** group contains a submenu where tools for report printing are present. The picture below shows this submenu:




1 **Quick Print**. Print selected report by default without calling the dialog window.
2 **Print**. Print with calling the printing dialog window. You should define the **Printer**, **Print Range**, **Copies**.
3 **Preview** calls a **Viewer**.

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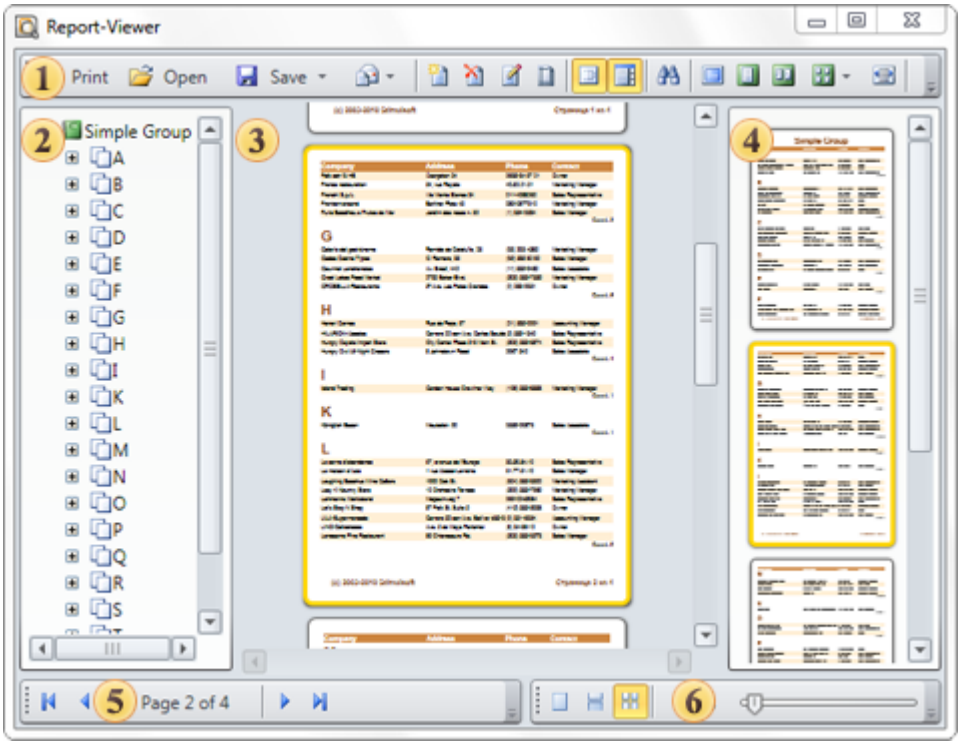
#### 4.4.1.5.1 Viewer.

On the picture below the basic elements of the report viewer are shown.




1 The basic commands to control the report are represented on the toolbar.
2 Tree of bookmarks of the output report. Using these bookmarks it is possible to jump by structure elements of a report.
3 The output report.
4 The report thumbnails panel. Decreased copies of a report are shown on this panel. The panel is used to quickly navigate throughout of a report.
5 The toolbar to scroll up or down in reports pages.
6 The toolbar to select the mode of report showing.
7 The toolbar to increase or decrease report zoom.

**Toolbar panel**

Main controls are placed on this toolbar. The picture below shows the structure of the toolbar:

1 Run report printing. After activation of this command the printing dialog with parameters of printing will be displayed.
2 Open previously saved report. Any rendered report can be saved to .mdc or .mdz format for further

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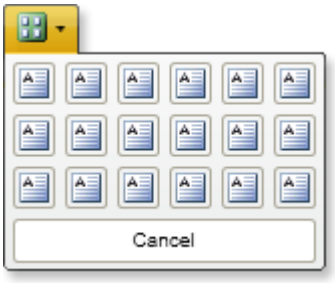
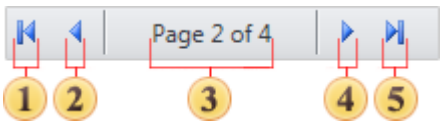
preview.
3 Save the rendered report to other file formats.
4 Send the render report via EMail. The report will be converted to one of the file formats.
5 Add a new empty page to the rendered report.
6 Delete the current page of a report.
7 Open the reports designer and show the current page for editing.
8 Opens the window of changing basic parameters of the rendered report.
9 Show/hide the tree of bookmarks. If there are no bookmarks in the rendered report then the viewer will automatically hide the tree of bookmarks. If there are bookmarks in a report, then the viewer will automatically show the tree of bookmarks.
10 Show/hide the reports thumbnails.
11 Enable the search panel.
12 Run the full screen mode of report showing.
13 Change zoom of the report to display only one full page. More than one page by the width can be output.
14 Change zoom of the report to display two pages on the screen.
15 Change zoom of the report according to horizontal and vertical sizes of pages.




16 Change zoom of the report to fit the page width to the screen width.
17 Run matrix mode of the report showing.

**Navigation**

On the picture below the toolbar that is used for report navigation is shown.




1 Set the first page of a report as the current page.
2 Set the previous page of a report as the current one.
3 Show the number of the current page and the number of pages in a report. If click on it then it is possible to indicate the number of a page that should be the current.

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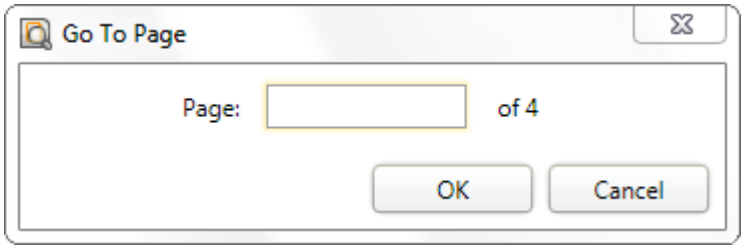



4 Set the next page of a report as the current one.
5 Set the last page of a report as the current page.

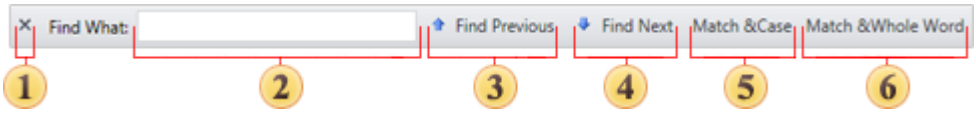
**Showing pages**

The viewer for WPF supports three modes of viewing pages:
1. **Single Page**
2. **Continuous**
3. **Multiple Pages**

Three buttons are used to control the page view mode. They are placed at the bottom of the viewer in the right corner.

**Search panel**

The search panel is used to search some text in the report. On the main toolbar this option can be enabled by clicking the binocular icon. All controls for search are placed on a single panel.




1 Close the search panel.
2 The text that should be found.
3 The button to find previous phrase.
4 The button to find next phrase.
5 Find specific search results using the match case option.
6 Find specific search results using the whole word option.

### 4.4.1.6. Designer

The **Designer** group is relevant to the report designer. The picture below shows the submenu of the **Designer** group:

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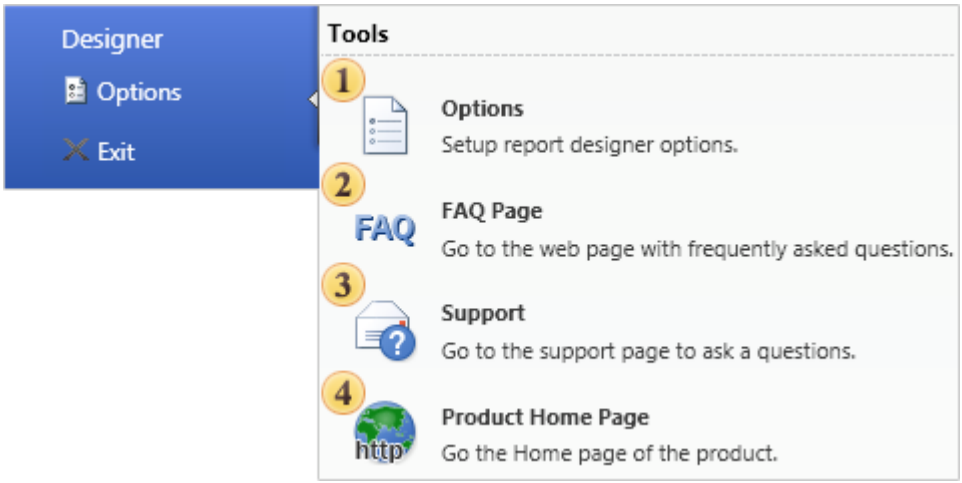


1 The **Options** submenu item calls the **Options** window for setting parameters of the designer.
2 The **FAQ** submenu item redirects to a Web page of Stimulsoft site with Frequently Asked Questions.
3 The **Support** submenu item redirects to a form for sending a request to the technical support team of Stimulsoft.
4 The **Product Home Page** submenu item redirects to the product home page: www.stimulsoft.com

#### 4.4.1.6.1 Options.

If to select the **Options** item in the submenu of the **Designer** group, then the **Options** window is invoked where you can do basic settings and information settings of a report. The picture below the **Options** dialog box:

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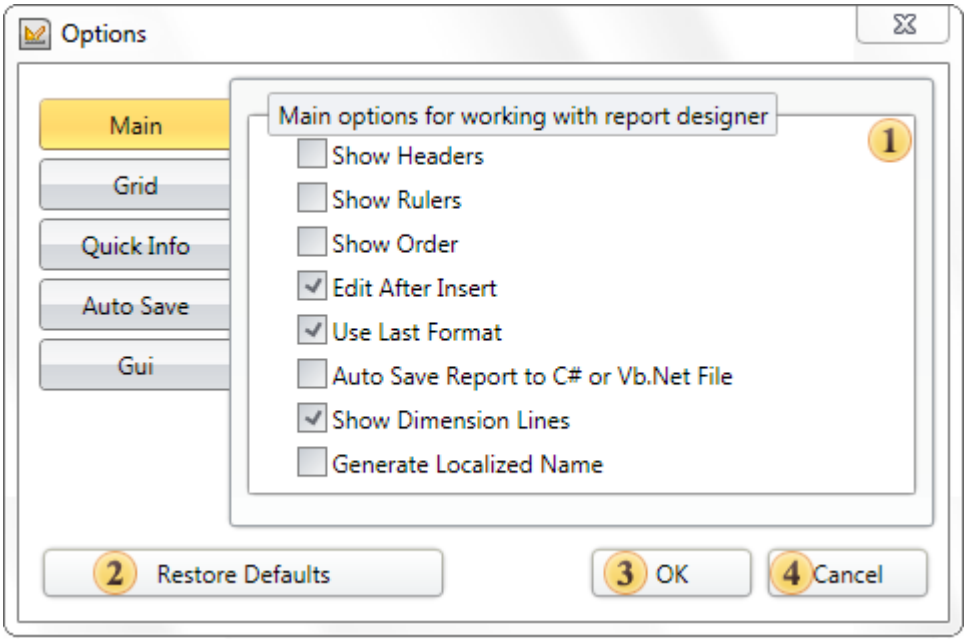


As can be seen from the picture above, the **Options** dialog box contains five tabs: **Main**, **Grid**, **Quick Info**, **Auto Save**, **Gui**. The **Main** tab is represented by one 1, which has the basic options of a designer such as:

1. The Show Headers option enables/disables displaying headers of components of the report.
2. The **Show Rulers** option enables/disables displaying rulers.
3. The **Show Order** option enables/disables displaying the order number of the report component.
4. The **Edit After Insert** option enables/disables invoking the editor after creating a component in the report.
5. The **Use Last Format** option enables/disables using the latest format of a component.
6. The **Auto Save Report to C # or VB.NET File** option enables/disables auto-saving of a report as a source file. This source file will be saved together with a report in the .mrt file.
7. The **Show Dimension Lines** option enables/disables the dimension lines.
8. The **Generate Localized Name** option enables/disables the mode of creating a component with localized names. If this option is disabled, then the components are created with names in English. If included, then the component name will be localized according to the selected language.

The **Grid** tab defines the parameters of displaying a grid.

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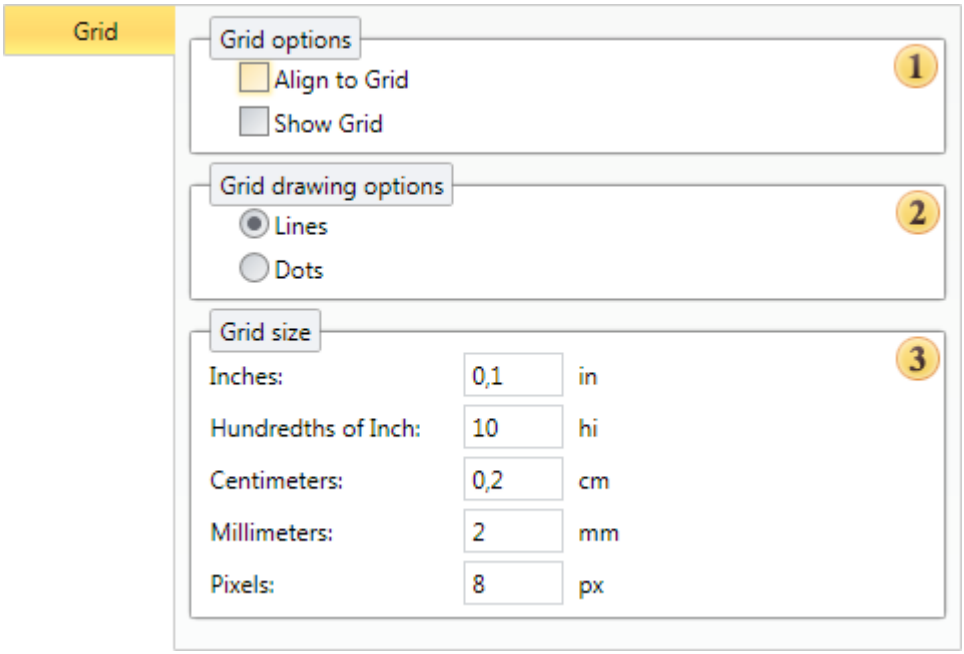
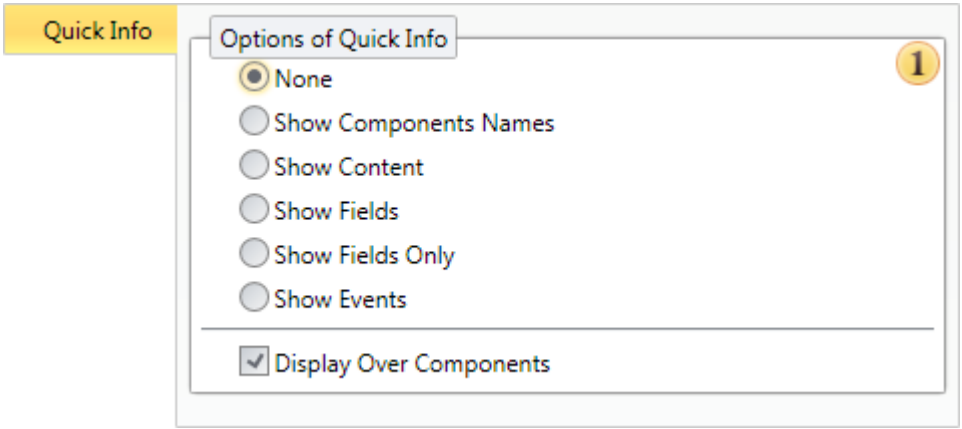



As can be seen from the picture above, this tab consists by three groups:
1 The **Grid Options** group includes such parameters as: **Align to Grid** snaps a report component to grid; **Show Grid** enables/disables the grid.
2 The **Grid drawing options** group. The grid style can be applied in this group: **Lines** or **Dots**;
3 The **Grid size** group. This group sets the grid spacing in different units: **Inches**, **Hundredths of Inch**, **Centimeters**, **Millimeters**, **Pixels**.

Parameters of quick info messages are defined in the **Quick Info** tab.




As can be seen from the picture above, this tab contains a single group 1, which defines the following parameters:
1. The Options of Quick Info option specifies what information you want to display.
2. The Display Over Components option enables/disables the mode of displaying the quick info in the foreground, i.e. over all components.

The **Auto Save** tab contains the parameters responsible for the report auto-saving.

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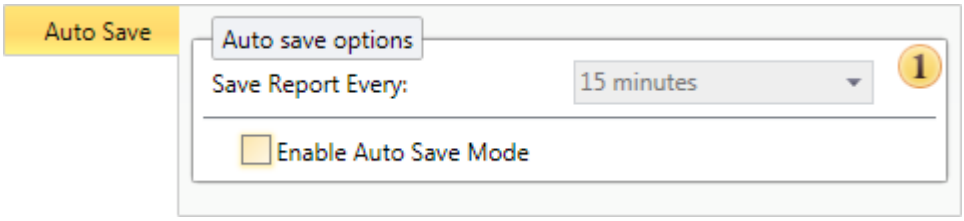
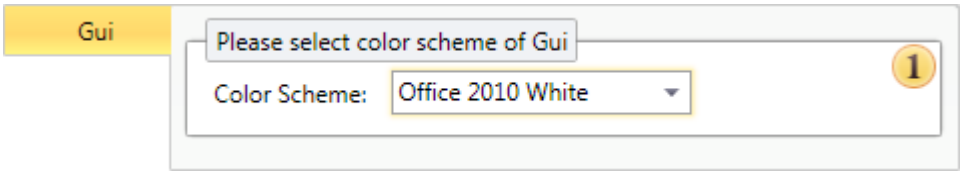



This tab contains a single group 1, which contains the following options:

1. The **Save Report Every** option determines the time interval after which an auto-save event occurs.
2. The **Enable Auto Save Mode** option enables/disables the auto-save mode of the report.

Interface options of the designer are defined on the **Gui** tab.



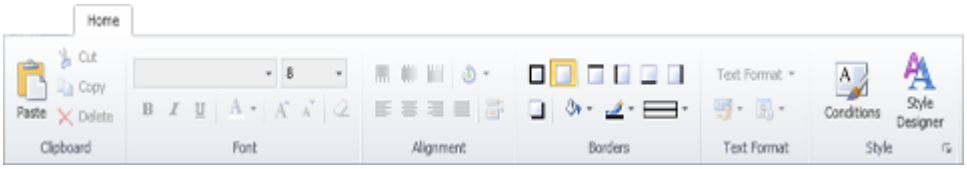

This tab contains a single group 1 and one **Color Scheme** parameter, which is required to change the type of interface and/or color theme.

## 4.4.2. Tabs

Tab is a part of the interface on which the toolbar. At the designer shows four tabs: **Home**, **Page**, **Layout**, **View**. Consider these tabs and the main instruments are located on them more.

### 4.4.2.1. Home Tab

This is a basic tab of the reports designer. Main commands of setting report components are placed on this tab.

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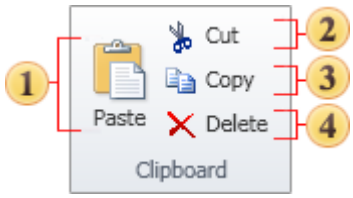
#### 4.4.2.1.1 Clipboard Group.

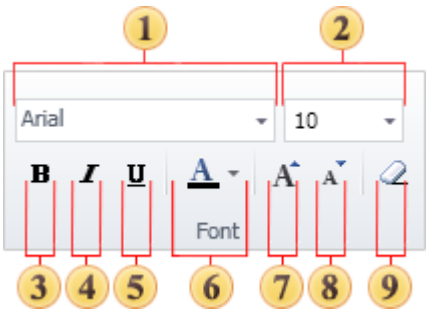
This group allows working with the Clipboard of the report designer.




1. Paste components from the Clipboard on the current page of a report.
2. Cut the selected components from the current page to the Clipboard.
3. Copy the selected components on the current page to the Clipboard.
4. Delete selected components on the current page.

#### 4.4.2.1.2 Font Group.

This group is used to output text with specified font type, color etc.




1. Select the font type of the text components on the current page.
2. Select font size of the text components on the current page.
3. Set the Bold font style.
4. Set the Italic font style.
5. Set the Underlined font style.
6. Set the font color of the text components on the current page.
7. Increase the font size.
8. Decrease the font style.
9. Delete the content of all selected text components.

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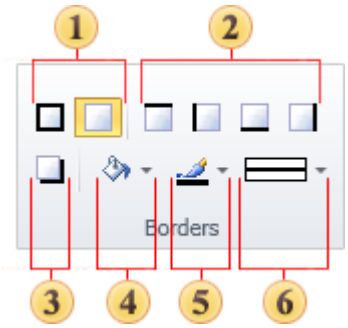
#### 4.4.2.1.3 Borders Group.

This group contains the commands to setup border components.

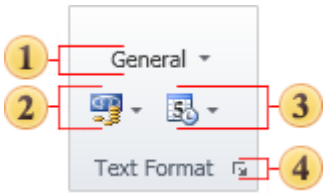



All commands can be applied to selected components on the current page.

1. Set or remove borders from all sides of a component.
2. Set or remove borders from each side of a component.
3. Border color of a component.
4. Set the shadow of a component.
5. Background color of a component.
6. The type of the border line.

#### 4.4.2.1.4 Text Format Group.

The group to control text formatting.




1. Select text format.
2. Select symbols of currency.
3. Set one of the predefined formats to output a text.
4. Call a form of formats editing.

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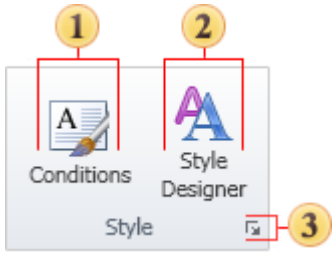
#### 4.4.2.1.5 Style Group.

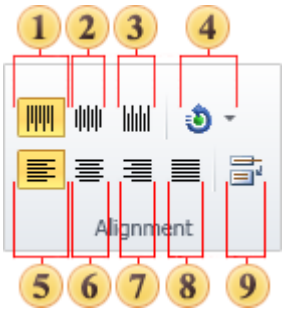
This group is used to control styles and conditions which are used to automatically design components in a report.




1. Open a window of the Conditions Editor for selected components.
2. Open a window of Styles Editor.
3. Call a form of styles editing.

#### 4.4.2.1.6 Alignment Group.

The group is used to align the content of components horizontally and vertically. Also it is possible to set the angle of the text rotation and control the **WordWrap** property.




All commands are applied to selected components on the current page.

1. Align top the content of a component.
2. Align center vertically the content of a component.
3. Align bottom the content of a component.
4. The angle of the text rotation. This command can be applied only to the text component.
5. Align left the content of a component.
6. Align center horizontally the content of a component.
7. Align right the content of a component.
8. Justify the content of a text component.
9. Used for the WordWrap property of the text component.

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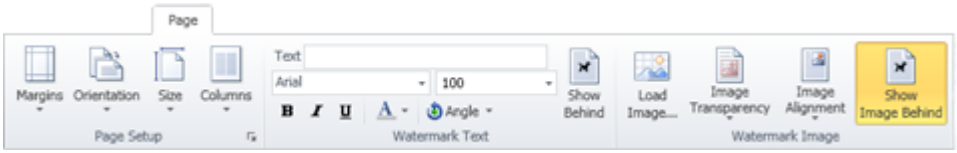
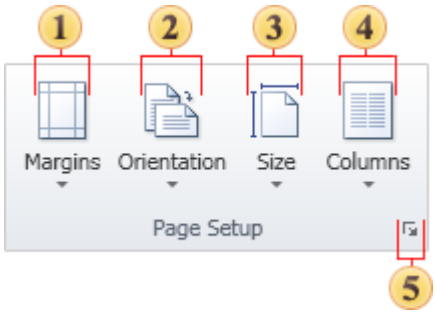
### 4.4.2.2. Page Tab

This tab is used to control page parameters.




#### 4.4.2.2.1 Page Setup Group.

This group contains elements to control basic parameters of a page. These are page margins, orientation, page size, columns.




Changes can be applied to the current page in the Reports Designer.

1. Select sizes of page margins.
2. Select Portrait or Landscape orientation of a page.
3. Select page size.
4. Select number of columns on a page.
5. Call the Page Setup dialog window.

#### 4.4.2.2.2 Watermark Text Group.

This group is used to control watermark text output.

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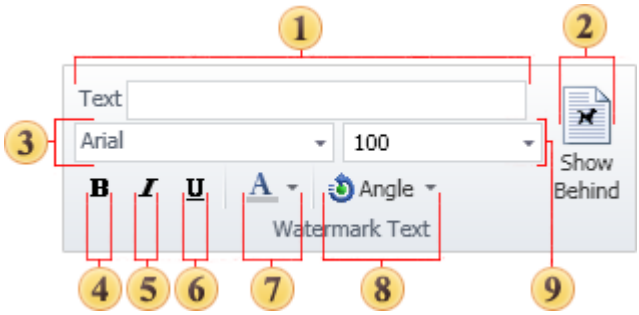
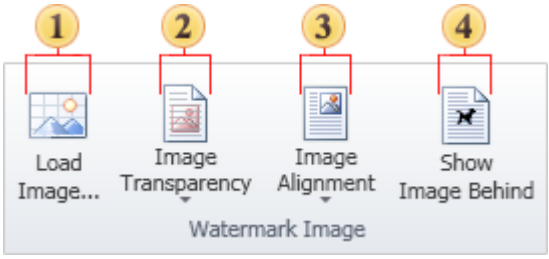



1. Watermark text.
2. Show watermark text behind the components of a page.
3. Select a font type to output a text of the watermark.
4. Set the Bold font style of the watermark text.
5. Set the Italic font style of the watermark text.
6. Set the Underlined font style of the watermark text.
7. Watermark text color.
8. Set angle rotation of the watermark text.
9. Font size of the watermark text.

#### 4.4.2.2.3 Watermark Image Group.

This group is used to control the watermark image.




1. Load an image for the watermark.
2. Set transparency of the watermark image.
3. Align the watermark image.
4. Show the watermark image behind page components on page.

### 4.4.2.3. Layout Tab

This tab is used to control placing different components on a page and also to specify styles of docking components.

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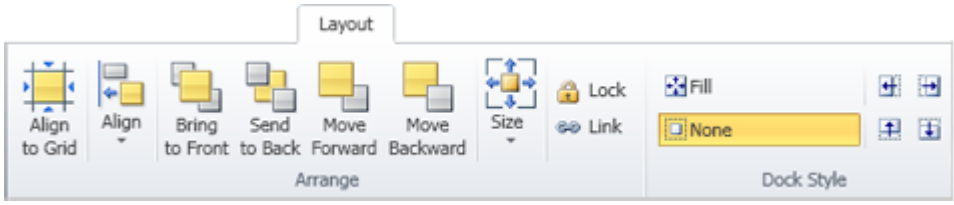
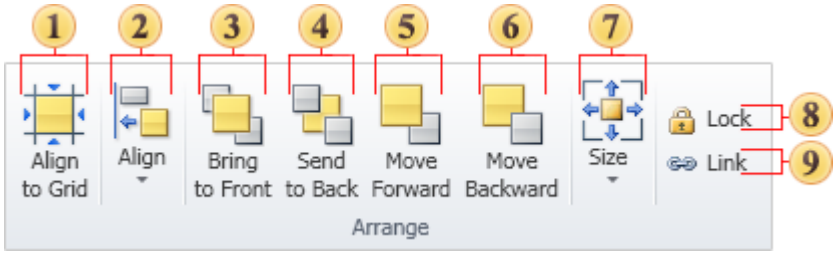



#### 4.4.2.3.1 Arrange Group.

The group contains a lot of commands to change position of components on a page. The picture below shows this group.




1 Align all selected components to the page grid.
2 Align selected components. This element contains submenu and short description in this topic below.
3 Bring selected components to Front.
4 Send selected components to Back.
5 Move selected components on one level forward.
6 Move selected components on one level backward.
7 Choose the size of selected components. It contains submenu and is described in this topic below.
8 Control the Lock property.
9 Control the Link property.

The description of the **Align** button, specified with number 2 on the picture above.

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1. Align all selected components to their common left margin.
2. Align horizontally all selected components to their common center.
3. Align all selected components to their common right margin.
4. Align all selected components to their common top margin.
5. Align vertically all selected components to their common center.
6. Align all selected components to their common bottom margin.
7. Make horizontal spacing of selected components equal by their width.
8. Make vertical spacing of selected components equal by their height.
9. Center all selected components horizontally.
10. Center all selected components vertically.

The description of the **Size** button, specified with number 7 on the topmost picture.

1. Make the same size of components as the size of the first selected component.
2. Make the same width of components as the size of the first selected component.
3. Make the same height of components as the size of the first selected component.

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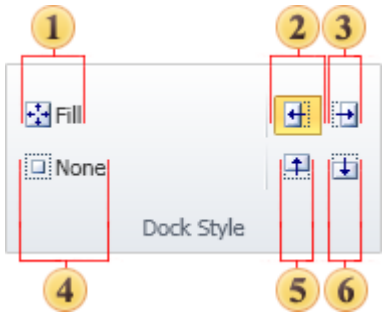
#### 4.4.2.3.2 Dock Style Group.

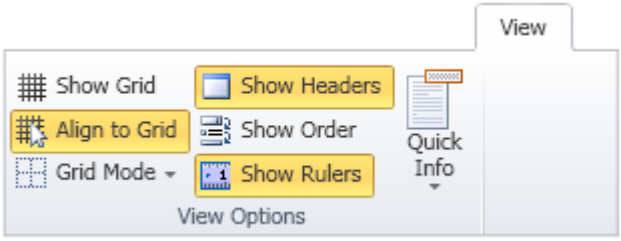
This group contains elements to set the dock style of selected components.




1. Dock selected components to all edges.
2. Dock selected components to the left edge.
3. Dock selected components to the right edge.
4. Removes dock style of selected components.
5. Dock selected components to the top edge.
6. Dock selected components to the bottom edge.

### 4.4.2.4. View Tab

This tab is used to control different options of working with report designer.




#### 4.4.2.4.1 View Options Group.

This group contains settings for different parameters of showing a report and working with the reports designer.

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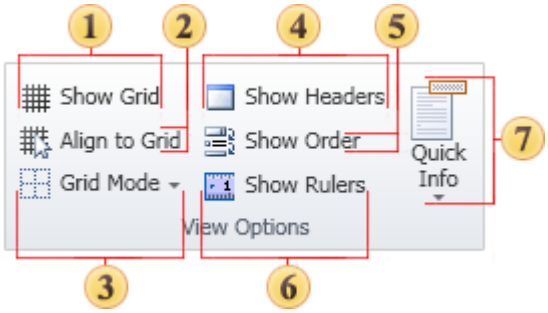


1. Control showing grid on a page.
2. Control automatic alignment of components by the grid.
3. Select grid type.
4. Show/hide headers of bands.
5. Show/hide the order of placing components on a page.
6. Show/hide rulers on a page.
7. Control Quick Info.

### 4.4.3. 2010 Status Bar

Status bar in 2010 **Ribbon** interface is located at the bottom of the designer. This is a panel on what controls are placed. The picture below shows a status bar Ribbon Interface:

This panel contains 5 fields:

1. Units. This field displays the units used in a report, and also allows you to change them.
2. This field displays the currently selected components. In this case, a page "**Page 1**"is selected.
3. This field displays the coordinates of the cursor on a page of a report template.
4. Show a messages window. Messages are information about errors of compilation or errors which occur while report rendering.
5. Control zoom of a report template page.

## 4.5. Creating Reports in Designer

A report in the designer can be created using the tools for creating reports and report components. Also, you can create a report using Report Wizards: Standard Report, Master-Detail Report and Label Report.

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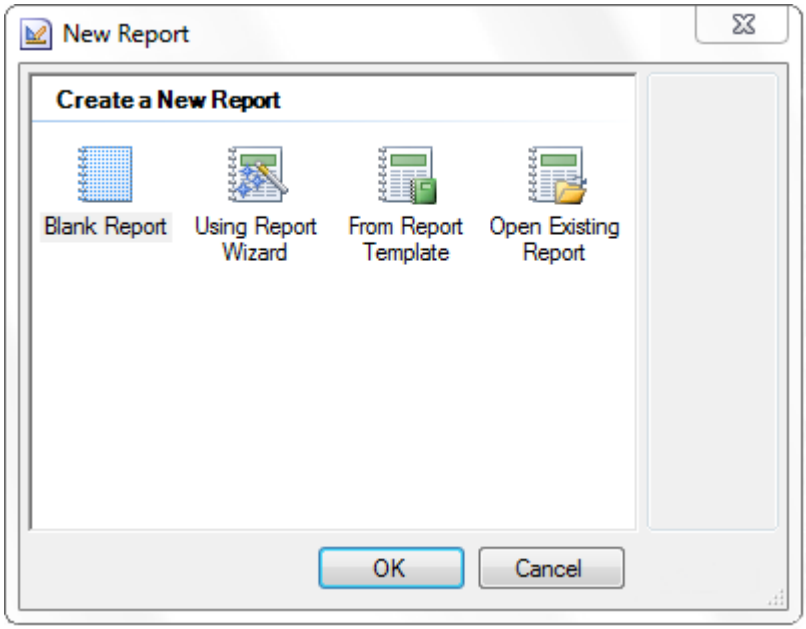
## 4.5.1. Introduction

When creating a new report in the **New Report** dialog you should choose a way to create a report. The picture below shows the **New Report** dialog:




As can be seen from the picture above, there are four ways of creating a report: **Blank Report**, **Using Report Wizard**, **From Report Template**, and **Open Existing Report**.

1. **Blank Report**. A report is created manually, i.e., a blank page is loaded. A user adds report components without using the wizard.

2. **Using Report Wizard**. A report is created using the wizard. A user selects a wizard for step-by-step designing a report.

3. **From Report Template**. A user chooses a report template among available ones.

4. **Open Existing Report**. A user can open a previously saved report.

## 4.5.2. Report Templates

When creating a new report it is possible to use the report template. Select **File|New Report|Create a New Report|From Report Template**. A report template is a report that is not rendered. The picture below shows a **New Report** window where you can see a list of available report templates:

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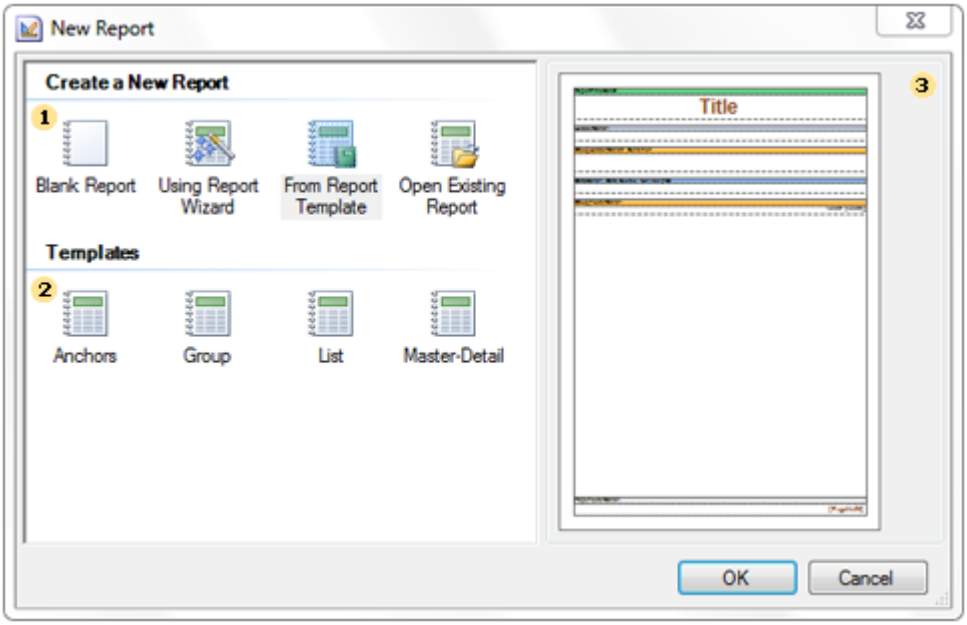


1 A field for selecting the way of creating a report. In our case we need to select the **From Report Template** item.
2 A field where one can see a list of report templates.
3 A window shows a preview of a report template.

Report templates, are stored in **Templates** folder of the root directory of the report designer. If this folder is not created or there are no reports in this folder, then the field marked 2 on a picture above will be empty. It is possible to add their own report templates to the **Templates** folder.

## 4.5.3. Report Wizards

Select the **Using Report Wizard** item in the **New Report** window to call the **Report Wizard**. Then it is necessary to select the type of a report wizard. The picture below shows the **New Report** window to start creating a report using reports wizard:

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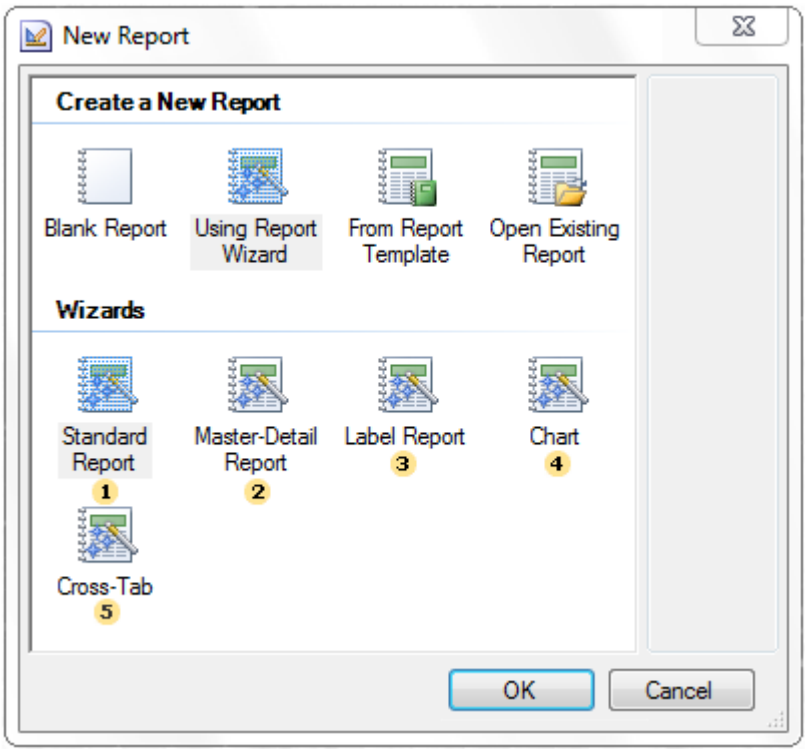


1 The **Standard Report** wizard is used to create reports as a list.
2 The **Master-Detail Report** wizard is used to create a **Master-Detail** reports.
3 The **Label Report** wizard is used to create Label reports.
4 The **Chart** wizard is used to create reports with charts.
5 The **Cross-Tab** wizard is used to create Cross-Tab reports.

Any **Report Wizard** has the following panels: **Description Panel**, **Steps Panel**, **Selection Parameters Panel**, **Control Panel**. The picture below shows the **Standard Report** wizard:

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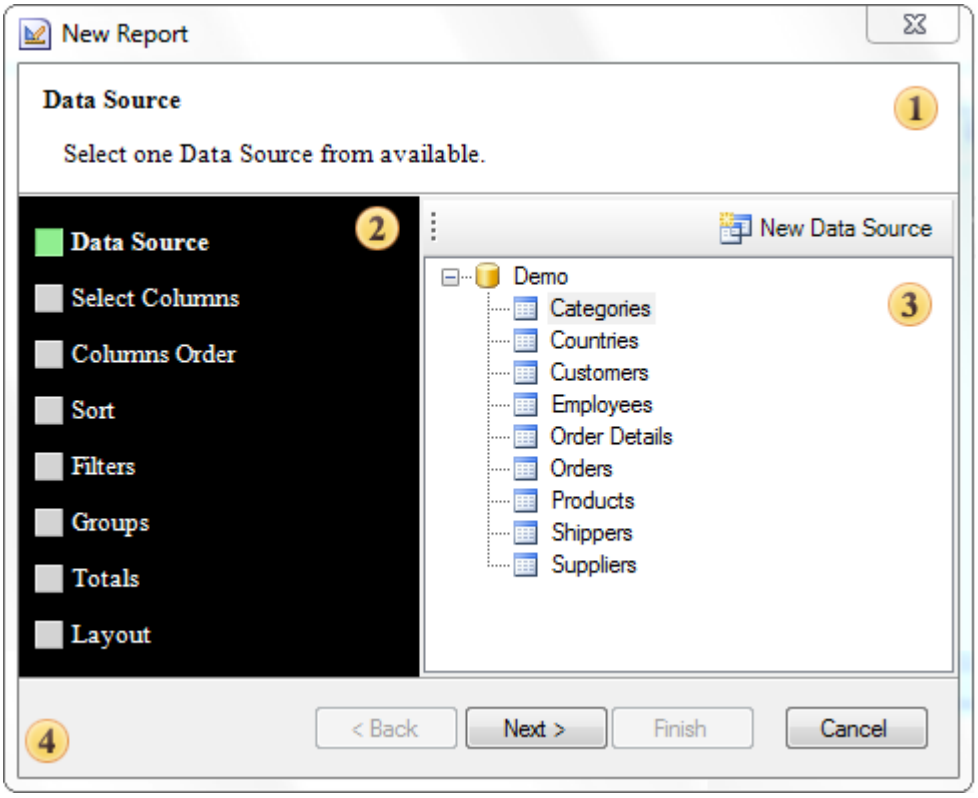


1 The **Description Panel**. This panel shows description of each steps to be done.
2 The **Steps Panel**. Shows steps of creating reports using a report wizard.
3 The **Selection Parameters Panel**. This panel shows report parameters. On each step of report creation its own options are available.
4 The **Control Panel**. Contains buttons to control the **Report Wizard**.

### 4.5.3.1. Standard Report Wizard

When creating a report using the **Standard Report** wizard, this report will contain one **DataBand** or one data **Table** (depends on what is selected). The picture below shows a window of the **Standard Report** wizard:

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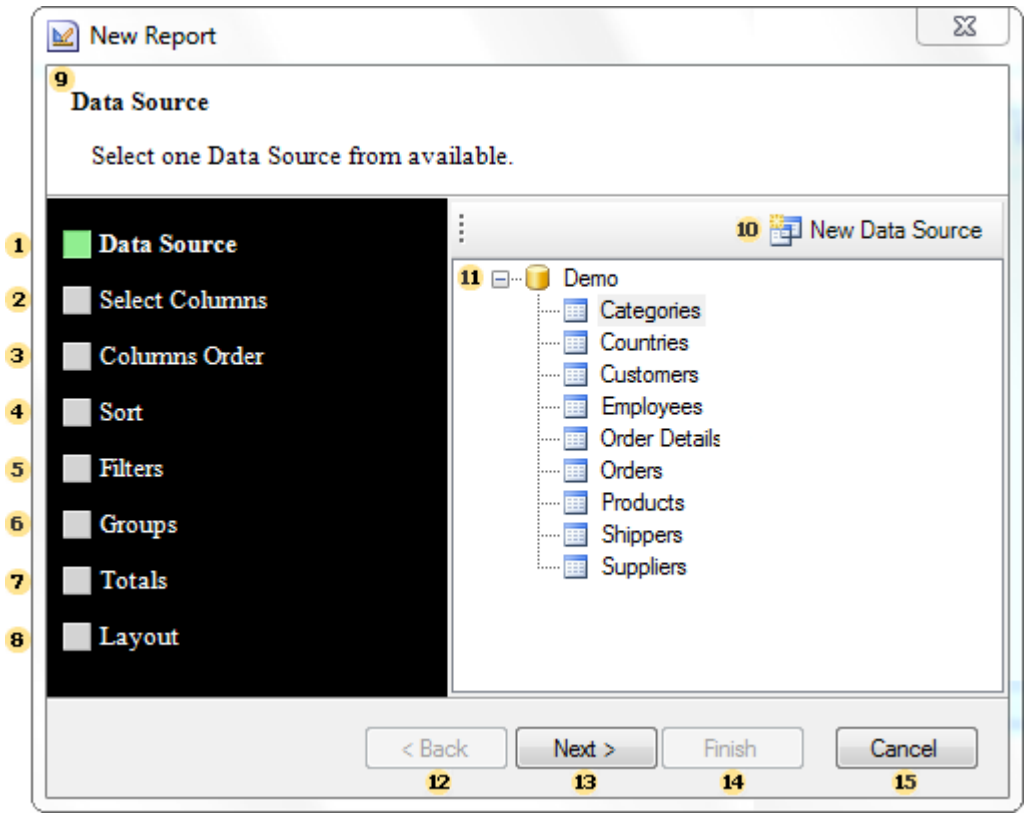
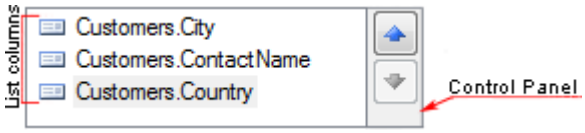



1 **Data Source**. On this step the data source is defined. This step is obligatory.
2 **Select Columns**. On this step columns of a data source are selected. This step is obligatory.
3 **Columns Order**. This step defines position of columns in the **DataBand**. Data columns selected in the second stage will be shown as a list on the **Selection Parameters Panel**. The top-down order of columns shown in the panel corresponds to their left-to-right position in a report. It is possible to change the position of data columns by dragging them or by clicking the buttons on the control panel of this step. The picture below shows the order of columns on the **Selection Parameters Panel**:




4 **Sort**. On this step, it is possible to specify elements and sorting direction. The picture below shows a sample of the **Selection Parameters Panel** of sorting:

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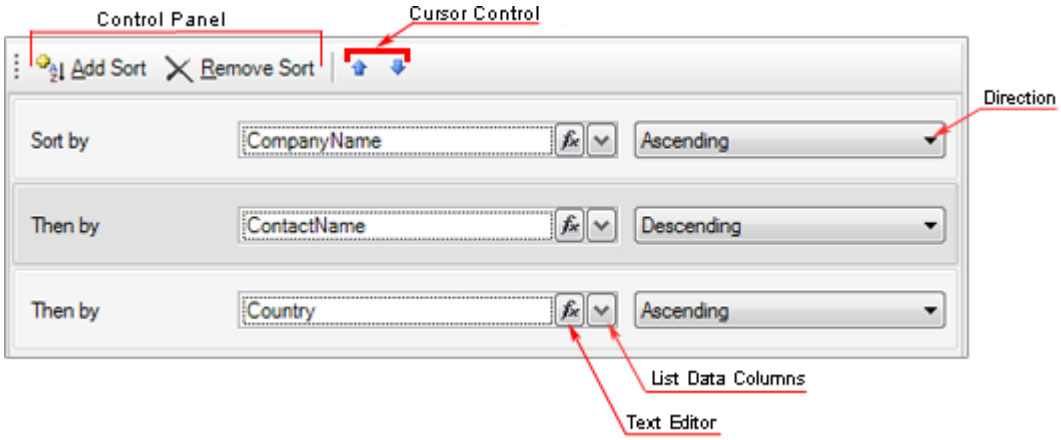
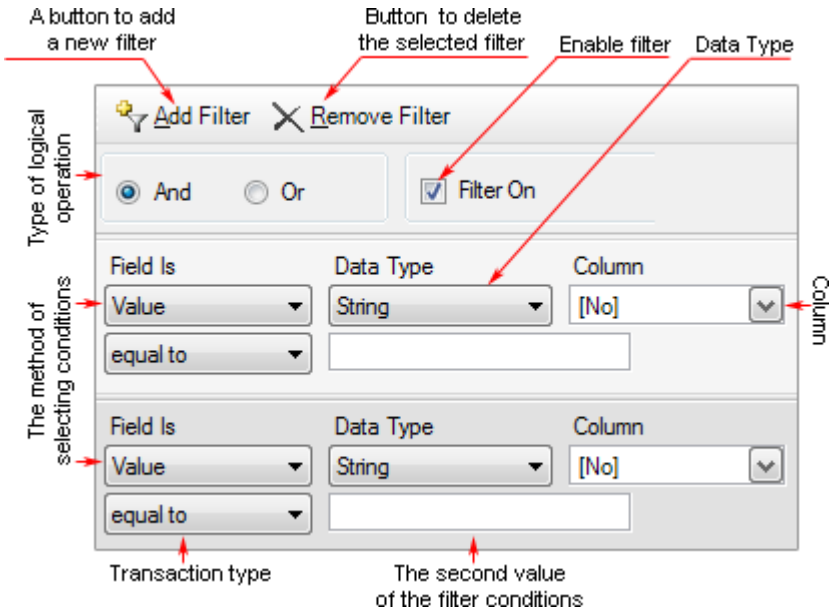



5 **Filters**. On this step, it is possible to set the conditions of filtration. The picture below shows a sample of selection filtration parameters:




6 **Groups**. This step defines the condition of grouping. It is necessary to select a data column by what conditions of grouping will be created.

7 **Totals**. On this step, it is possible to select a function for calculating totals by any data source column. For each data column its own function of aggregation can be set.

8 **Layout**. On this step, the basic report options are set. Among them are: page **Orientation**, script **Language**, a **Component** that will be used for report rendering (DataBand or Table), report **Units**. The picture below shows a sample of the **Selection Parameters Panel** layout:

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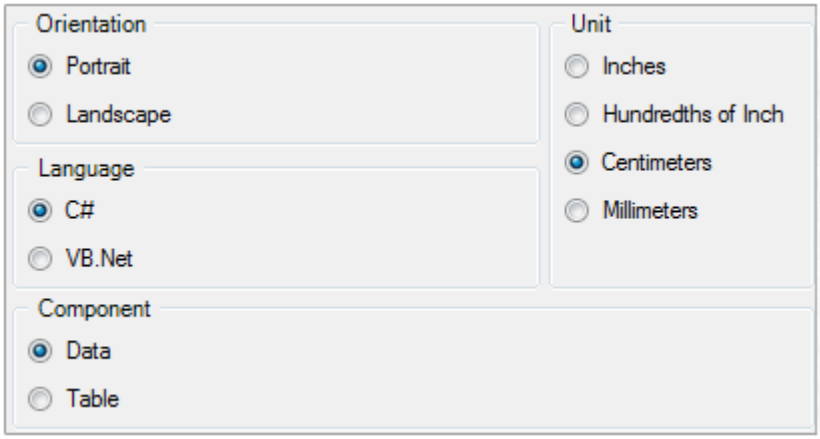


9 The **Description Panel**. Shows description for the current step.
10 The **New Data Source** button is used to create a new data source.
11 The **Selection Parameters Panel** shows options, actions, settings available on this step.

12 - 15 buttons are used to control the **Control Panel** wizard:
12 The **Back** button is used to go to the previous step.
13 The **Next** button is used to go to the next step.
14 The **Finish** button is used to finalize work with the report wizard.
15 The **Cancel** button cancels the report creation with the report wizard.

### 4.5.3.2. Master-Detail Report Wizard

The **Master-Detail** report can be created using the **Master-Detail Report** report wizard. The picture below shows a window of the **Master-Detail Report** wizard:

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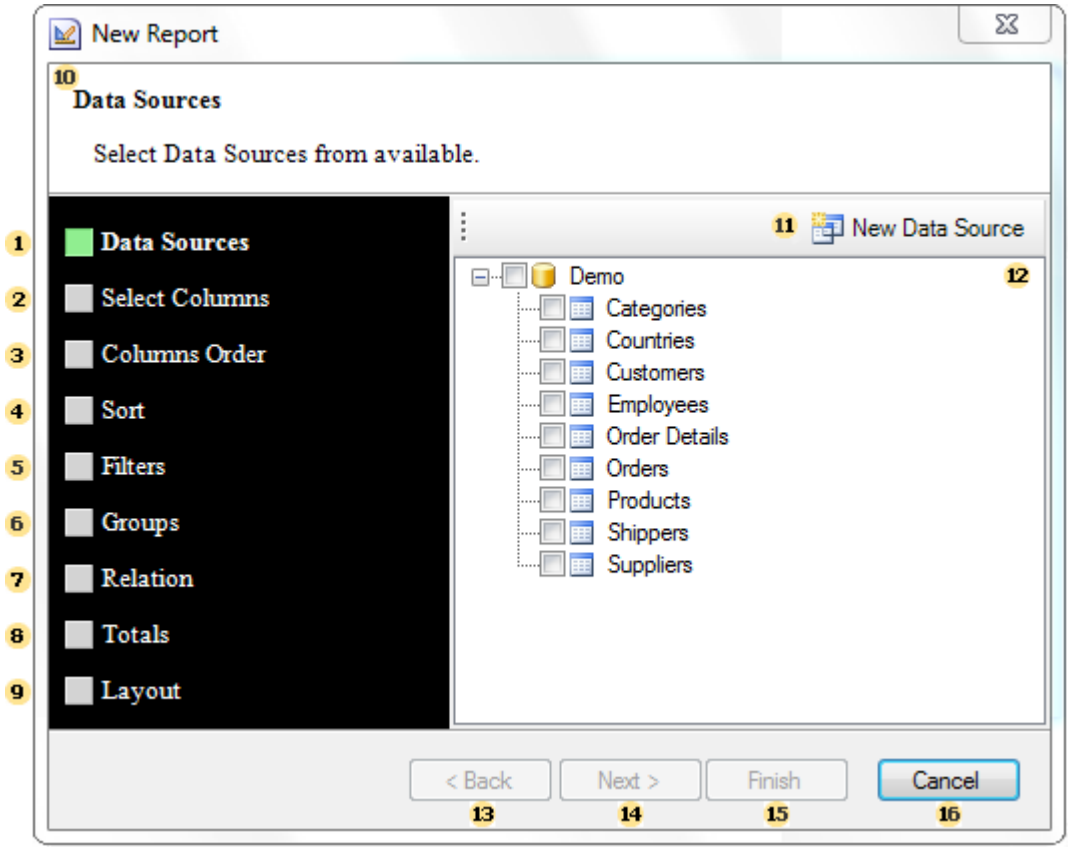
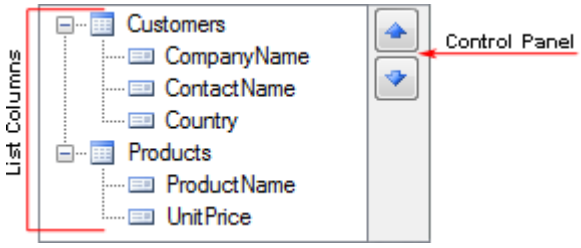



1 **Data Source**. On this step the data source is defined. This step is obligatory. For creating the **Master-Detail Report**, the report template should have no less than one **Master** band and one **Detail** band.

2 **Select Columns**. On this step columns of a data source are selected. This step is obligatory.

3 **Columns Order**. This step defines the order of columns. Data columns selected in the second stage will be shown as a list on the **Selection Parameters Panel**. The top-down order of columns shown in the panel corresponds to their left-to-right position in a report. It is possible to change the position of data columns by dragging them or by clicking the buttons on the control panel of this step. The picture below shows the order of columns on the **Selection Parameters Panel**:




4 **Sort**. On this step, it is possible to specify elements and sorting direction. The picture below shows a sample of the **Selection Parameters Panel** of sorting:

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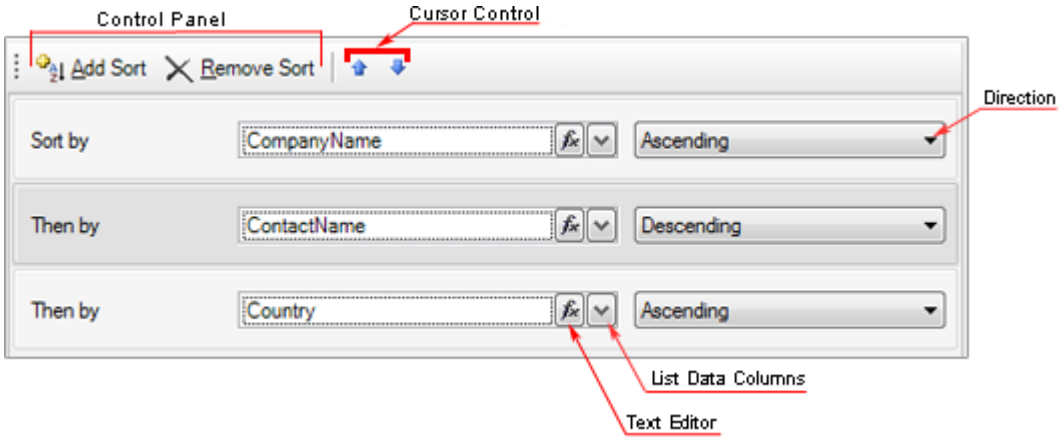
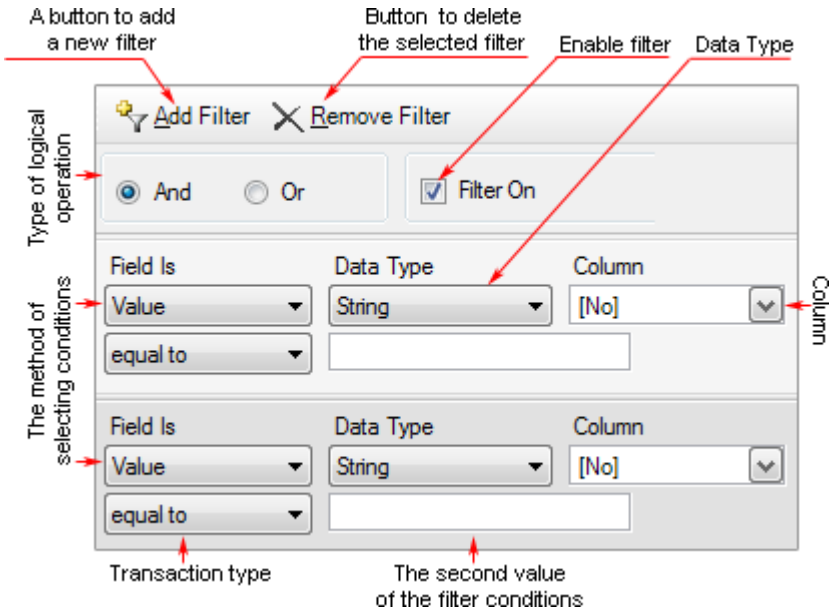



5 **Filters**. On this step, it is possible to set the conditions of filtration. The picture below shows a sample of selection filtration parameters:




6 **Groups**. This step defines the condition of grouping. It is necessary to select a data column by what conditions of grouping will be created.

7 **Relation**. defines the relation between **Master** and **Detail** bands. The relation is used for selecting detail data only for the specified **Master** band row. If a relation will not be specified then all **Details** data rows will be output for each row of the **Master** band. Selection is done between relations which are created between **Master** and **Detail** data sources, and where a **Detail** data source is a detail data source. More than one relation can be. So it is necessary to select the correct relation.

8 **Totals**. On this step, it is possible to select a function for calculating totals by any data source column. For each data column its own function of aggregation can be set.

9 **Layout**. On this step, the basic report options are set. Among them are: page **Orientation**, script **Language**, a **Component** that will be used for report rendering (DataBand or Table), report **Units**. The picture below shows a sample of the **Selection Parameters Panel** layout:

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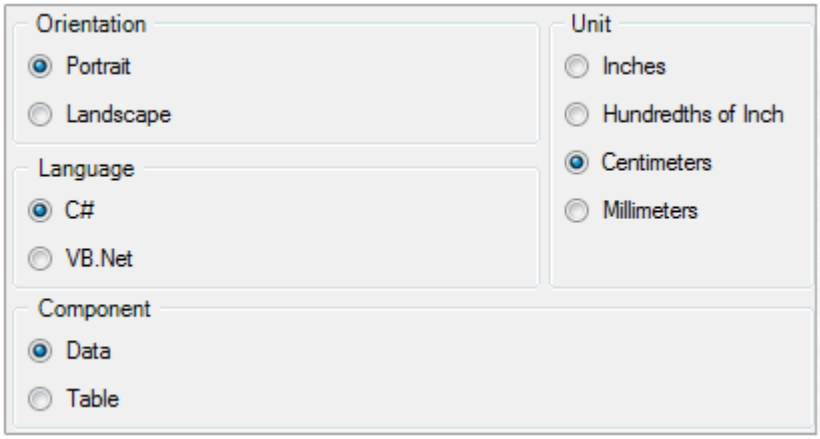


10 The **Description Panel**. Shows description for the current step.
11 The **New Data Source** button is used to create a new data source.
12 The **Selection Parameters Panel** shows options, actions, settings available on this step.

13 - 16 buttons are used to control the **Control Panel** wizard:
13 The **Back** button is used to go to the previous step.
14 The **Next** button is used to go to the next step.
15 The **Finish** button is used to finalize work with the report wizard.
16 The **Cancel** button cancels the report creation with the report wizard.

### 4.5.3.3. Label Report Wizard

The **Label Report** wizard is used to create reports which have labels. The picture below shows a window of the **Label Report** wizard:

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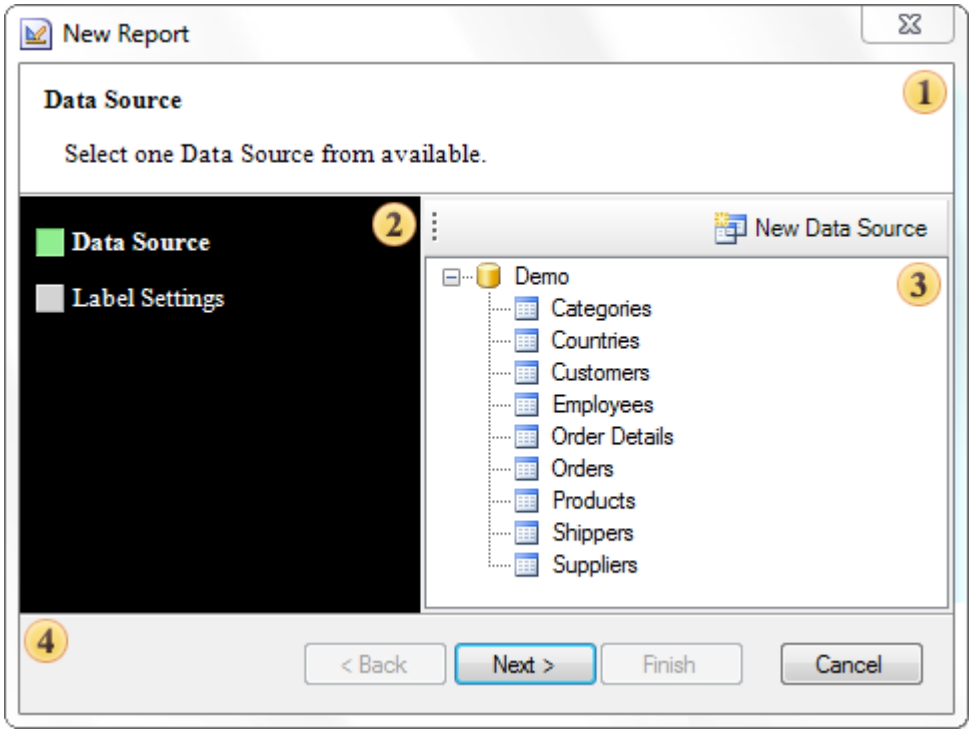


1 The **Description Panel**. Shows description for the current step.
2 The **Steps Panel** shows step of report creation.
3 The **Selection Parameters Panel** shows options, actions, settings available on this step.
4 The **Control Panel**. Contains buttons to control the **Report Wizard**.

A **Label Report** is created in two steps. The **Data Source** is defined on the first step, **Label Settings** are defined on the second step. The picture below shows the **Selection Parameters Panel** on the second step of the **Label Settings:**

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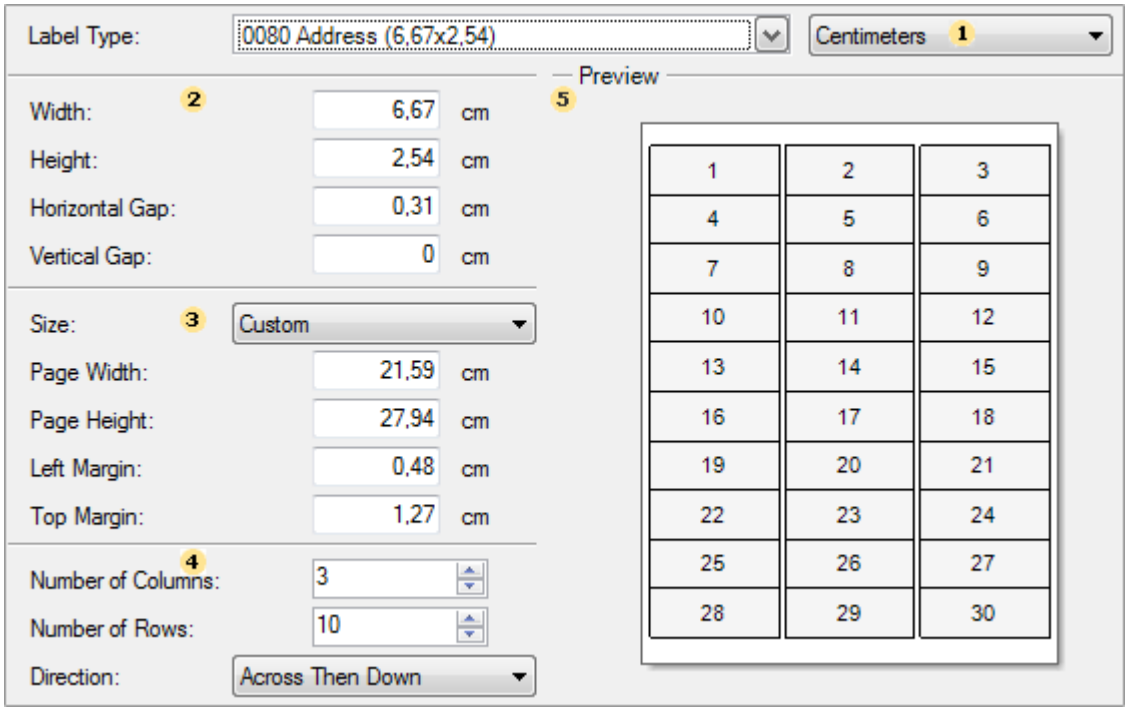


1 The **Type Panel** is used to select the **Label Type** and units.
2 The **Size Label Panel** is used to change the label size.
3 The **Size Pages Panel** is used to select the page size or manually set width and height and margins of a page.
4 The **Configuration Label Panel** is used to set a number of rows, columns and direction of labels.
5 The **Preview Panel** is used to preview how labels are placed on a page.

### 4.5.3.4. Chart Wizard

The **Chart** wizard is used to create reports with charts. The picture below shows a window of the **Chart** wizard:

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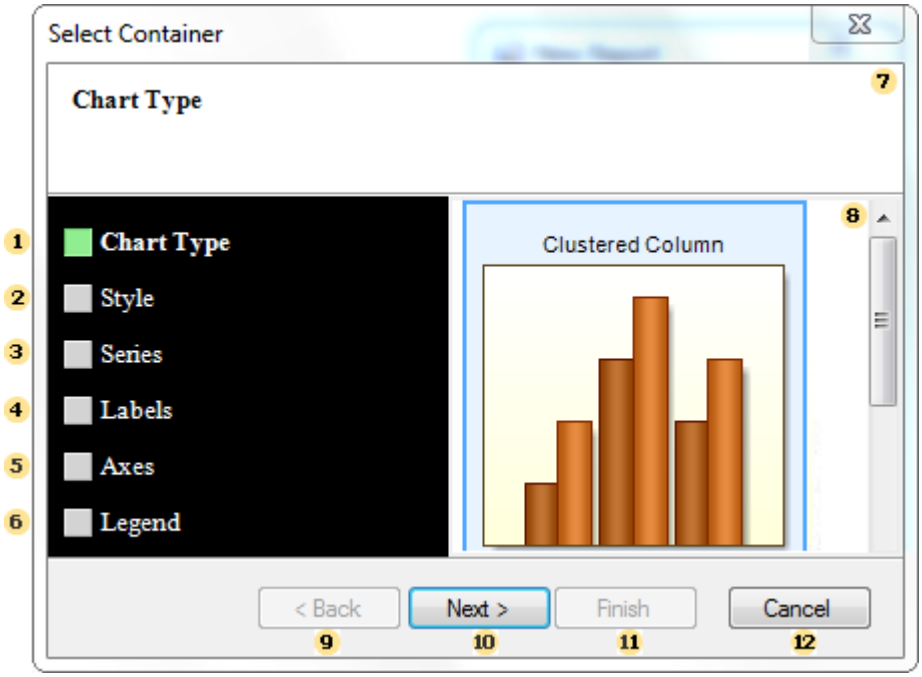


1 **Chart Type**. Select the chart type.
2 **Style**. Select the chart style from multiple templates.
3 **Series**. Add series using the series editor. Also, it is possible to specify the column of values and arguments for the data source.
4 **Labels**. The following parameters are defined on this step: series position, **Value Type** of series, **Text before/after** the series, and an **Angle** of inclination.
5 **Axes**. This step is available only if selected chart type is in **Axes Area**. The following options are set on this step: axis **Title** and its **Alignment**, **Ticks** length and their **Visibility**, **Grid Lines** and its **Interlaced**, **Labels** and their **Visible** property. Also, a chart can be shown vertically or horizontally. The Reverse property for X or Y axis should be applied for this.
6 **Legend**. On this step legend parameters and charts such as **Title**, legend **Alignment** horizontally and vertically, **Direction** of rows in legend, **Visible** and **Size** of a marker, **Spacing**, **Visible** of the legend.
7 The **Description Panel**. Shows description for the current step.
8 The **Selection Parameters Panel** shows options, actions, settings available on this step.

9 - 12 buttons are used to control the **Control Panel** wizard:
9 The **Back** button is used to go to the previous step.
10 The **Next** button is used to go to the next step.
11 The **Finish** button is used to finalize work with the report wizard.
12 The **Cancel** button cancels the report creation with the report wizard.

### 4.5.3.5. Cross-Tab Wizard

The **Cross-Tab** wizard is used to create reports with cross-tab. The picture below shows the window of the **Cross-Tab** wizard:

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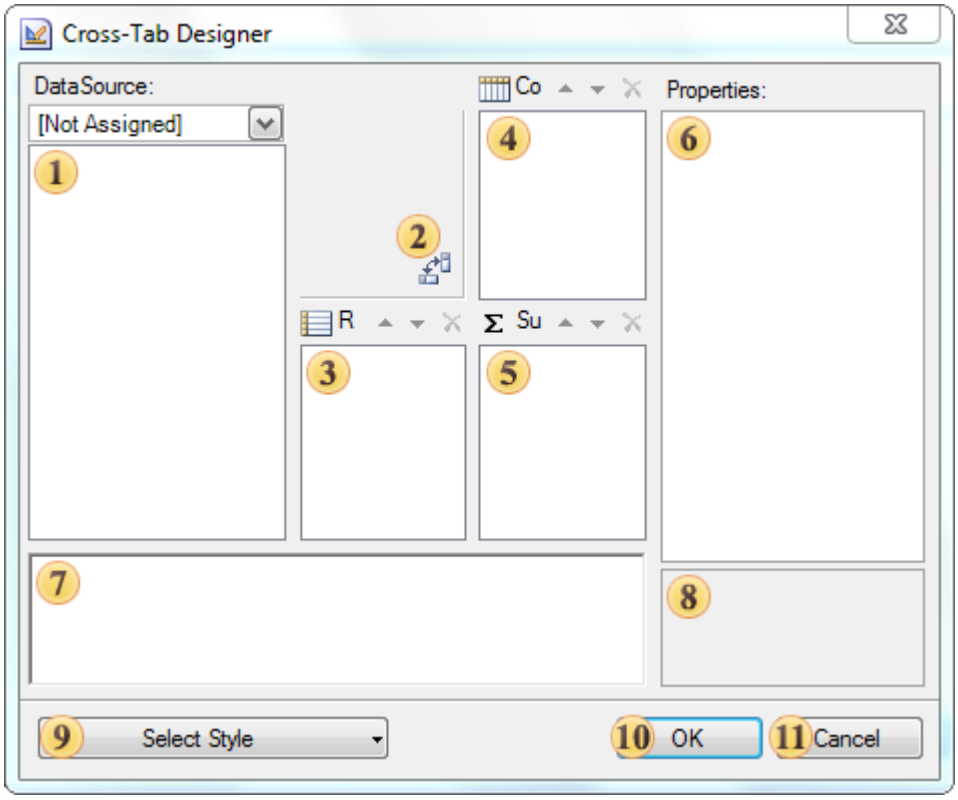


1 **Data Source Panel**. In the **Data Source** field it is necessary to select the data source. Then data source columns will be shown on the panel of the data source.
2 The **Swap Rows/Columns** button is used to change data between columns, which are placed on the **Rows** and **Columns** panels.
3 The **Rows** panel shows data source columns, which are rows of a cross table.
4 The **Columns** panels shows data source columns, which are columns of a cross table.
5 The **Summary** shows data source columns, which are the key column and row in the cross table. Key column and row generate summary cell.
6 The **Properties** panel shows a table of properties of selected column of the data source.
7 The **Preview Panel** is used to preview the template of a cross table.
8 The **Property description panel** shows a description of the selected property.
9 The **Select Style** button is used to select style of the cross table appearance.
10 The **Ok** button. Click on the button to finish work with the wizard and either a cross table will be added on a page or cross table options of an existed table will be applied.
11 The **Cancel** button cancels the report creation with the report wizard.

## 4.6. Panels

In this section the basic panels of the designer, such as: **Dictionary**, **Messages**, **Report Tree**, **Properties** will be reviewed. These panels contain different properties, functions and commands to control various components of a report, information fields arranged for notification and hints for a user. These panels can be shown or hidden. In the **Ribbon** UI showing or hiding panels can be done using the **Panels** button on the **View** tab. In the **Standard** UI showing or hiding panels can be done

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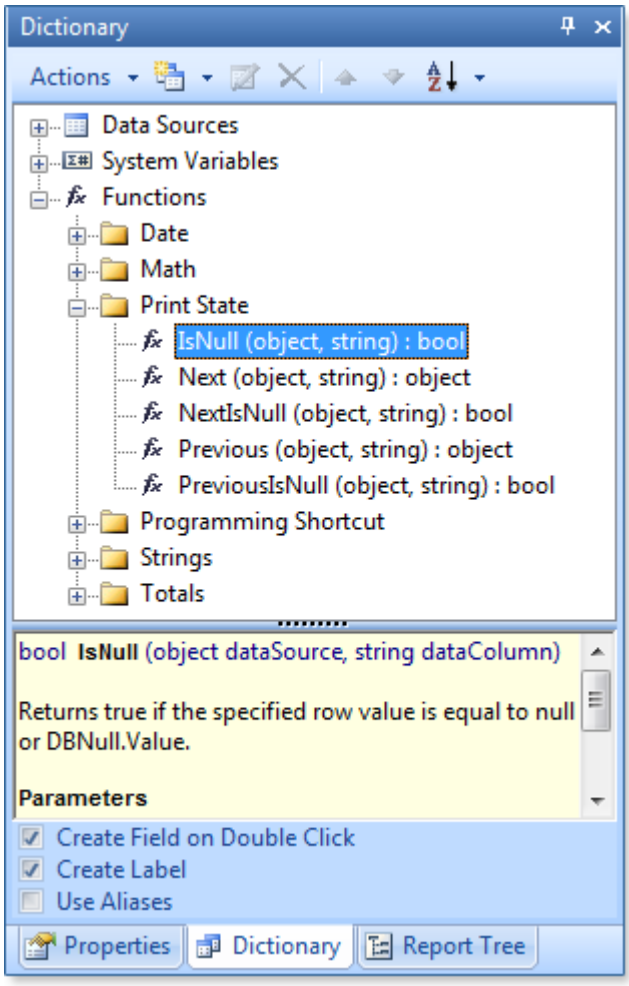
in the**View** tab of the **Main Menu**.

### 4.6.1. Dictionary

The **Dictionary** panel shows the connected data available data sources, system variables and functions. Besides, a connection and connecting new data sources can be done in the **Dictionary**. The picture below shows an example of the **Dictionary**:




The **Dictionary** panel includes: **Dictionary ToolBar**, **Data Tree**, **Description Panel**, **Dictionary Setting Panel**.

1. The **Dictionary ToolBar** is a set of tools and commands to work with the **Dictionary**. The picture below shows the **Dictionary ToolBar**:

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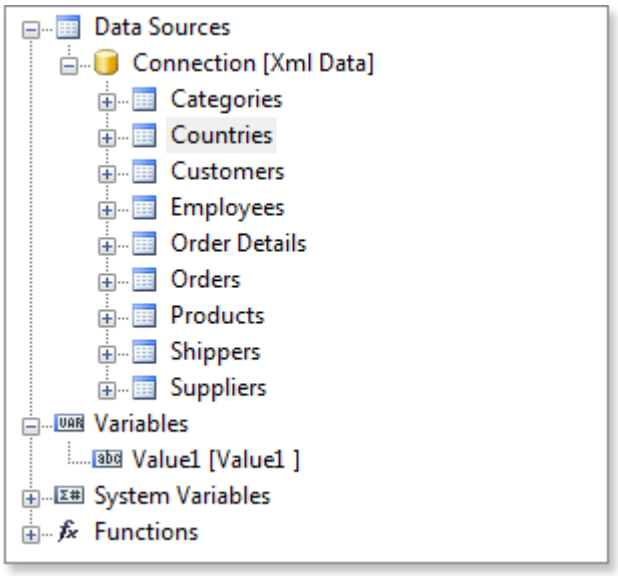
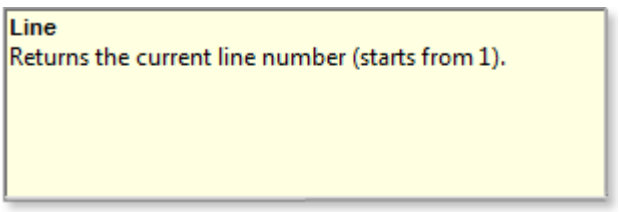
1 The **Actions** menu is a set of commands to work with vocabulary such as: creating, opening, saving a dictionary, adding, importing and exporting a dictionary to an XML schema, the synchronization of data presented in the dictionary with the data registered in a data store.
2 The **New Item** menu contains commands for creating new elements: new connection, new data source, new connection, new variable, business objects.
3 The **Edit** button is used to edit created elements. Pressing the button runs the editor of the element.
4 The **Delete** button deletes created elements.
5 The Up and Down buttons move the selected item in the hierarchy of a dictionary within a single level of a tree.
6 The **Sort Items** menu provides the opportunity to choose one of two directions of Sorting: **Ascending** from A to Z, **Descending** from Z to A. And also to enable or disable the **Auto Sort** mode.

2. The **Data Tree** represents a list of all data of a dictionary, which are displayed in a tree. The picture below shows an example of the **Data Tree**:




3. The **Description Panel** displays a short description of the selected system variable or function. The picture below shows an example of the **Description Panel** with the description of the **Line** system variable:




4. The **Dictionary Setting Panel** is a panel with three options to optimize the work with the dictionary and its contents.

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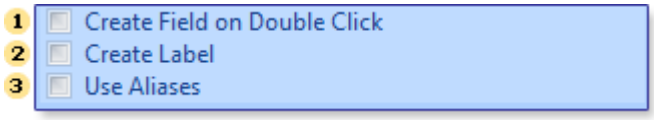
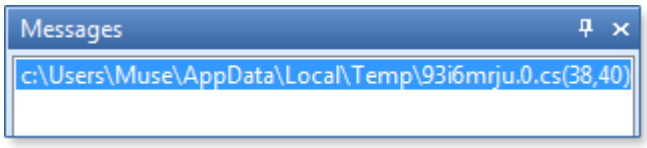



1 The **Create Field on Double Click** option provides the ability to create a field on the **DataBand** . Fields are created on the band, that has selected data source by which the fields the double-click in the dictionary is done.
2 The **Create Label** option attaches the column data header when it is dragged on the report template.
3 The **Use Aliases** option provides an opportunity to show **Aliases** of components instead of the **Name** in the report template.

## 4.6.2. Messages

The **Messages** panel is located at the bottom of the designer (above the status bar) and may be rolled out, and can remain to be deployed. This panel is required to notify a user about errors when compiling or when rendering a report. If, for example, when compiling, the syntax error was detected, the user will be sent to the Message. The picture below shows an example of the syntax error message:




If, for example, when rendering a report a critical error occurs, the user will be notified with the message in a separate window. The picture below shows an example of a critical error message when rendering a report:

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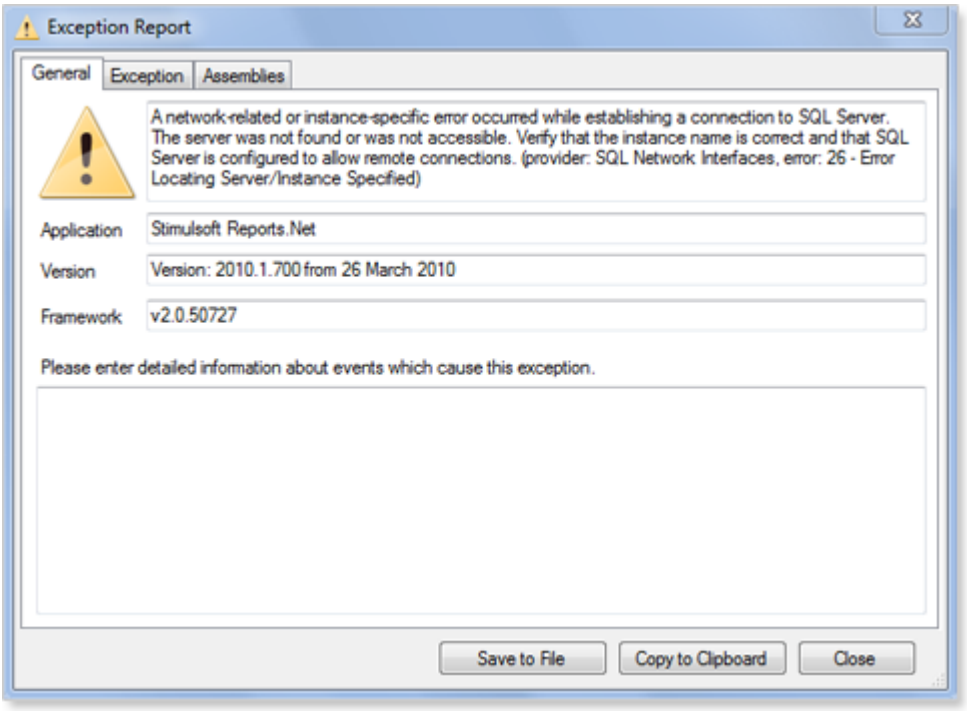
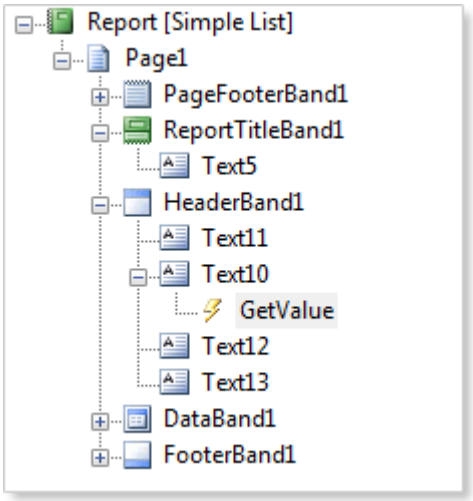



## 4.6.3. Report Tree

The **Report Tree** panel shows the hierarchy of the report, i.e. represents all the components of the report in the form of a tree. In addition, if an event handler is added to the component, it will also be displayed in the hierarchy of the report. The picture below shows an example of the **Report Tree** panel:




As can be seen on the picture above, hierarchy is represented on the principle of "nesting", and an

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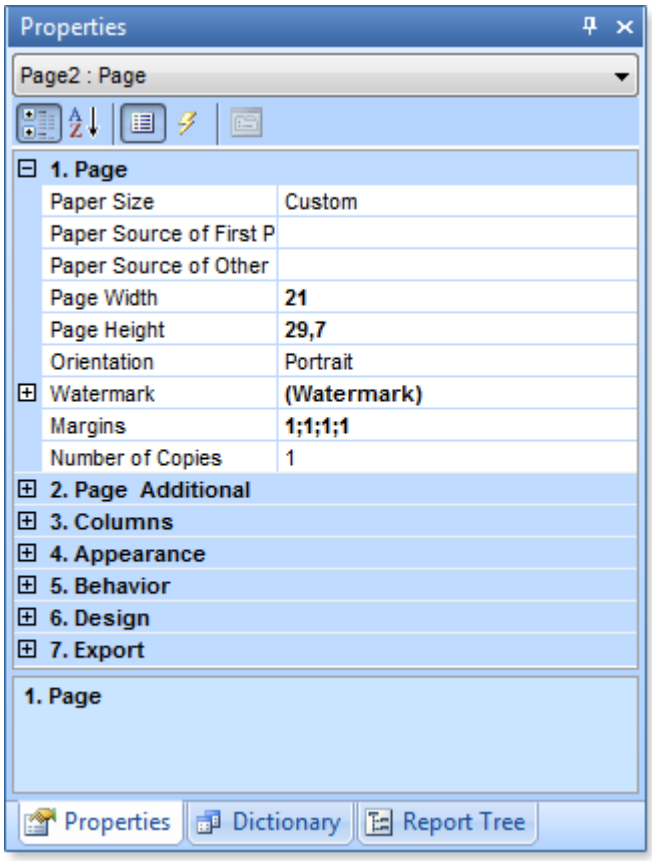
event handler is added for the **GetValue** event of the **Text10** component. The **Report Tree** panel provides the ability to visually identify the submission of a "component to a component".

### 4.6.4. Properties

The **Properties** panel shows all the properties of the selected component, and also its events. The picture below shows the **Properties** panel, displaying the properties of a component (left) and an event of a component (right):

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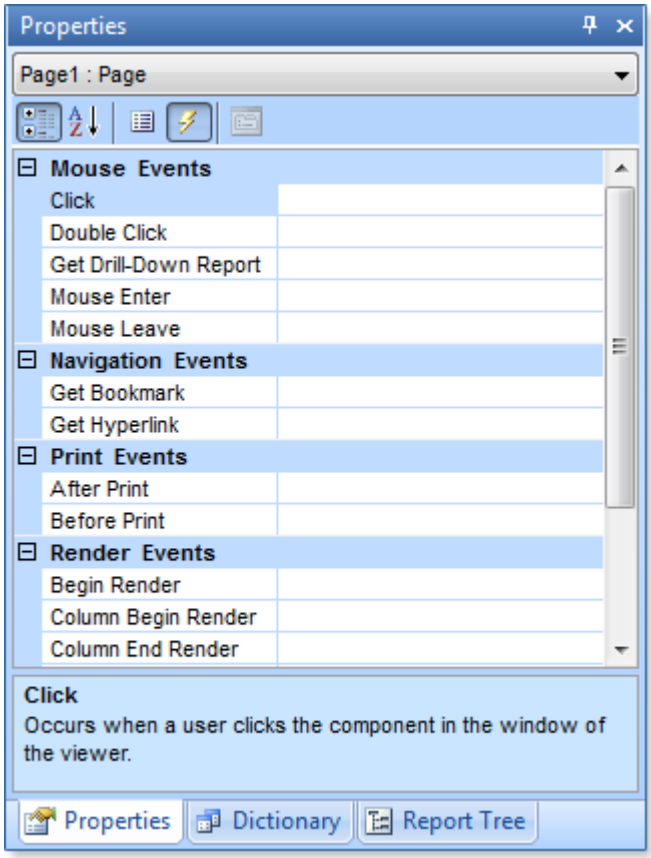


The **Properties** panel includes: **Drop-Down List of Components**, **Properties ToolBar**, **Properties** or **Events Table**, **Description Panel**.

1. The **Drop-Down List of Components** displays a list of all the components of a report. The picture below shows an example of the **Drop-Down List of Components**:

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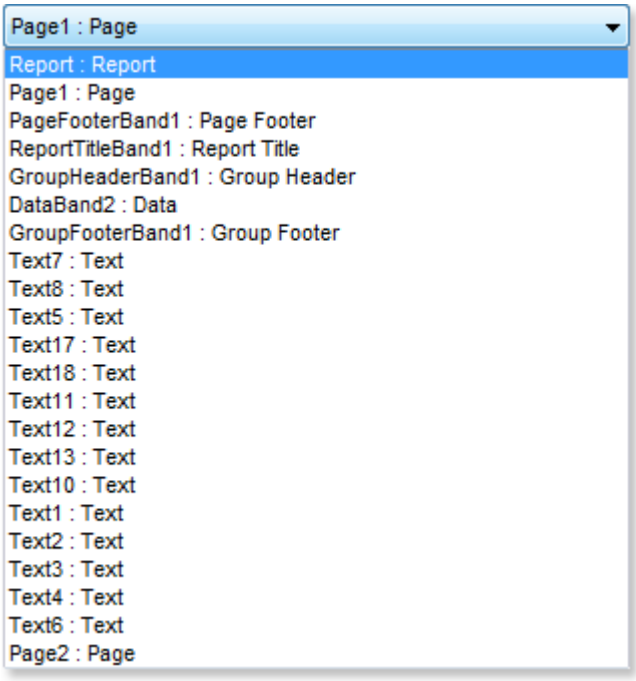
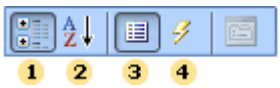



As can be seen on the picture above, the list is presented in two columns. The first column displays the **Name** of a component and the second one shows its type. For example, the string "**Text7: Text", "Text7**" is a **Name**, "**Text**" this is a type. If to select a component in this list then, on the Properties panel, properties and events of the selected component will be shown.

2. The **Properties ToolBar** is designed to control the **Properties** panel. The picture below shows the **Properties ToolBar**:




1 The **Categorized** sorting button is used to show a list of properties or events sorted by category.
2 The **Alphabetical** sorting button is used to show a list of properties or events are sorted alphabetically from A to Z.
3 The button for enabling the **Properties Tab**.
4 The button for enabling the **Events Tab**.

3. The **Properties** or **Events Tab** is table with two columns. The first column shows names of properties or events. The second column shows values of these properties or events. The number of rows depends on the number of properties or events, because one property or event takes a single row. The picture below presents a table of properties (left) and a table of event (right):

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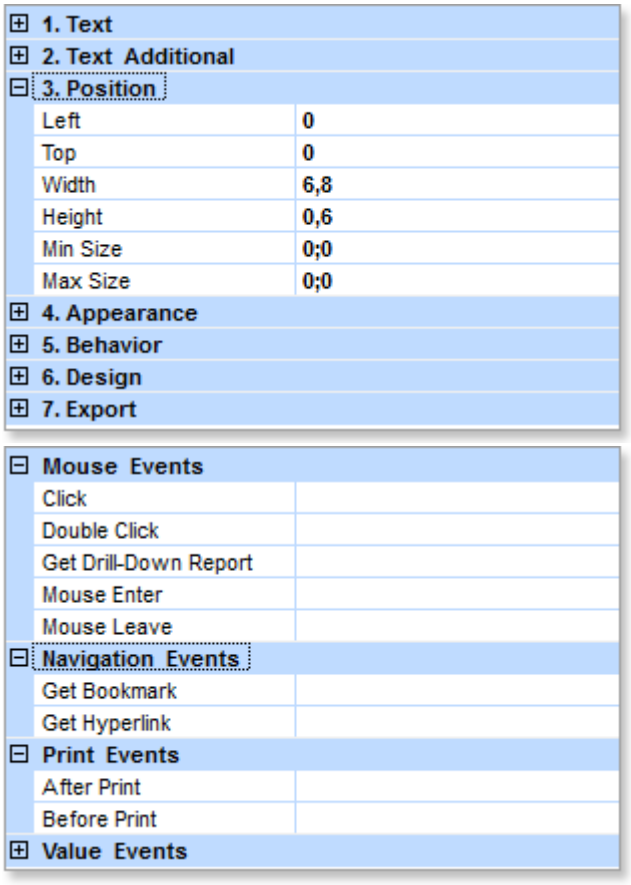
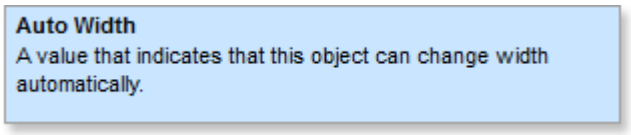



4. The **Description Panel** displays a short description of the selected property or event. The description can be hidden by right-clicking the **Properties** panel and clearing the check of the **Show Description** command in the context menu of the **Properties** panel. The picture below presents the **Description Panel**:




The **Localize Property Grid** present in the context menu of the **Properties** panel and can be called by right-clicking on this panel. If this command is enabled (checked), then the translation of the **Properties** panel will be implemented. If this command is disabled (not checked), then the names of properties, events, values and description of the **Properties** panel will be in English.

## 4.7. Keyboard Shortcuts in Designer

The reports designer supports many hotkeys. Using hotkeys can speed up the effectiveness of work in creating reports. Some hotkeys are available both in the Ribbon mode and in the Standard mode. Some hotkeys are available only the Standard mode (in the Ribbon mode they are duplicated by

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context commands).

| | |
|---|---|
| **Ctrl+B** | Makes letters **bold** for the selected text component |
| **Ctrl+I** | Makes letters *Italic* for the selected text component |
| **Ctrl+U** | Makes letters Underlined for the selected text component |
| **Ctrl+"+"** | Increase the font size for the selected component |
| **Ctrl+"-"** | Decrease the font size for the selected component |
| **Ctrl+L** | Align selection or paragraph to the left |
| **Ctrl+E** | Align selection or paragraph to the centre |
| **Ctrl+R** | Align selection or paragraph to the right |
| **Ctrl+J** | Justify selection |
| **Ctrl+Shift+D** | Activate the **"Dictionary"** panel |
| **Ctrl+Shift+M** | Activate the **"Messages"** panel |
| **Ctrl+Shift+L** | Activate the **"Report Tree"** panel |
| **F4**<br>**Shift+Enter** | Activate the **"Properties"** panel |
| **Ctrl+C**<br>**Ctrl+Insert** | Copy the selected text or object |
| **Delete**<br>**Ctrl+Delete** | Delete the selected component |
| **Ctrl+V**<br>**Shift+Insert** | Paste the text or object from the Clipboard |
| **Ctrl+X**<br>**Shift+Delete** | Cut the selected text or object |
| **Ctrl+A** | Select All |
| **Ctrl+Z** | Undo |
| **Ctrl+Y** | Redo |
| **Ctrl+F2** | Show **"Data Store"** |
| **Ctrl+F4** | Show **"Page Manager"** |
| **Ctrl+F5** | Show **"Services Configurator"** |
| **Ctrl+N** | Create a new report |
| **Ctrl+Shift+N** | Add a page to the report |
| **Ctrl+Shift+F** | Add a form to the report |
| **Ctrl+O** | Load a report from the file |
| **Ctrl+Shift+O** | Load a page from the file |

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| | |
|---|---|
| **Ctrl+S** | Save a report |
| **Ctrl+F12** | Save a report as... |
| **F5** | Report preview |
| **Ctrl+Enter** | Call the designer be default for the elected component |
| **Enter** | Call the text editor for the selected component |
| **F1** | Select the **"Select"** tool |
| **F2** | Select the **"Hand"** tool |
| **F3** | Select the **"Text Editor"** tool |
| **F6** | Select the **"Copy Style"** tool |
| **Cursor keys** | Move selection |
| **Shift+Cursor keys** | Resize selected component (one step = grid size) |
| **Shift+Alt+Cursor keys** | Resize selected component (one step = half grid size) |
| **Ctrl+Cursor keys** | Move selected component (one step = grid size) |
| **Ctrl+Alt+Cursor keys** | Move selected component (one step = half grid size) |
| **Ctrl+Drag mouse** | Copy selected components |
| **Alt+Drag mouse** | Ignore **"Align to Grid"** when moving and resizing |

## 4.8. Context Menu

**Context Menu** is a menu in a graphical user interface that appears upon user interaction (a right mouse click). A context menu offers a set of choices that are available in the current state of the component. The picture below shows a context menu of the text component:

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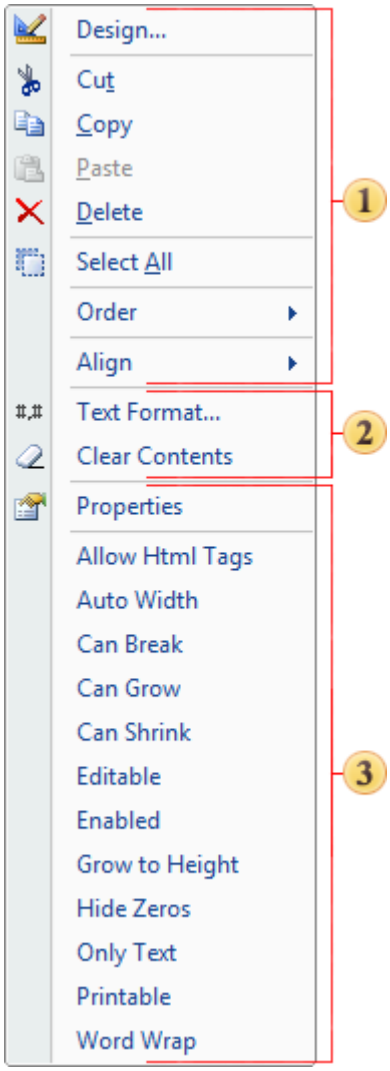


The context menu consists of three groups:

1 General commands. These are static commands, which can be applied to any component of the designer:
1) The **Design...** command invokes the editor of a selected component. For example, if it is a text component then the **Text Editor** will be called.
2) The **Cut** command cuts the selected component to the clipboard.
3) The **Copy** command copies the selected component to the clipboard.
4) The **Paste** command pastes from the copied or cut component from the clipboard.
5) The **Delete** command deletes the selected component.
6) When selecting two or more components, the **Size** command appears in the context menu. This command contains submenu in what it is possible to define the size parameters for all selected components.

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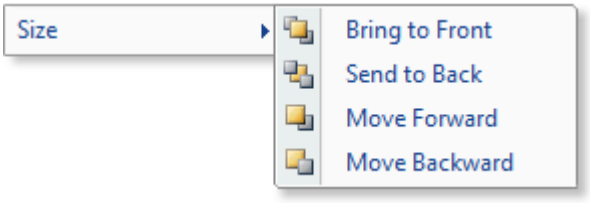
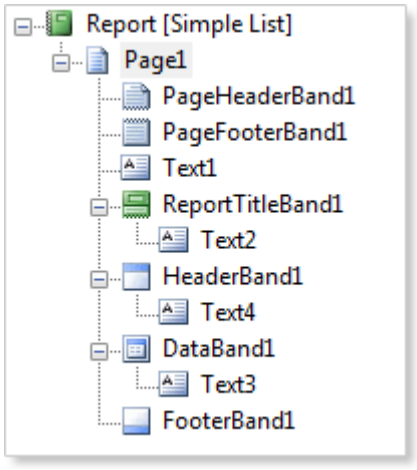
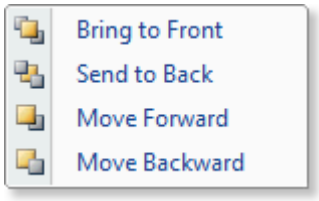



If you select all the components on the page, i.e. choose the **Select all** command in the context menu, or press the **Ctrl+A** key combination, then the prototype of the size for all components will be the size of the component that is placed on a higher level and higher than other components in the report tree in that level. It is possible to see the report tree on the **Report Tree** panel. The picture below shows an example of a report tree.




As seen on the picture above, the **PageHeaderBand** is located higher, so, in this case, its size is a sample of sizes for the remaining components. If the **PageHeaderBand** is absent, then, as a sample of sizes, the **PageFooterBand** will be taken. If the **PageFooterBand** is absent, then, as a sample of sizes, the **Text1** will be taken.

7) The **Select All** command selects all components on the current page.
8) The **Order** command invokes the submenu, in what it is possible to define the position of the selected component. The picture below shows the **Order** submenu:




9) The **Align** command invokes the submenu, in what it is possible to select the **Align to Grid** command. The picture below shows the **Align** submenu:

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2 Commands which are specific for the component.
3 It is possible to enable/disable different properties, without closing the context menu of the selected component.

## 4.9. Previewing Reports in Designer

Report Designer allows previewing a report before printing, exporting, sending via e-mail or any other action, in order to identify possible errors. Clicking the **Preview** or **HTML Preview** tabs it is possible to preview a report. You can also preview the report in the separate window by using the F5 shortcut key or selecting **Preview** from the main menu.

## 4.10. Toolbox

The **ToolBox** panel contains the main tools for creating reports. All items on this panel are divided into the following categories: **Select Edit Mode Category**, **Components Category**, **Shortcut Category**, **Shortcut Category Settings**. The picture below shows the **ToolBox**:

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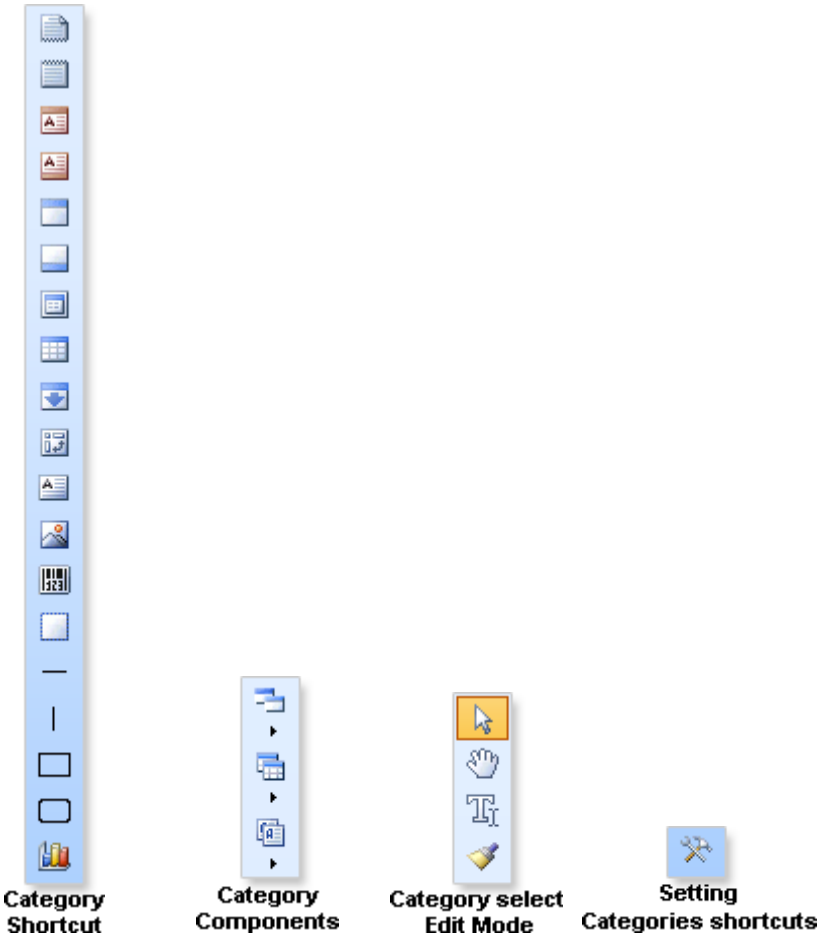


The Toolbox is located on the left side in the designer window and looks like a vertical panel. If necessary, the Toolbox bar can be shown or hidden. In Ribbon UI hiding or showing the **Toolbox** can be done by pressing the **Toolbox** button, which is located in the **View** tab. If the button is pressed, the **Toolbox** is shown. In Standard UI hiding or showing the **Toolbox** can be done by right-clicking and calling the context menu of the Toolbox or the Main Menu.

## 4.10.1. Shortcut Panel

The shortcut category is one of the basic panels of the **Toolbox** and is designed for quick selection of the component when creating a report template. There are some ways to add components on a page:
1. Drag and Drop. To do this, put the cursor on the component, left-click and drag the component on the page of a report template.
2. Select the required component, and then draw it on a report page.
To draw several components of one type, hold down the **Shift** key, select the components from the shortcut category. Once the component is selected, the **Shift** key can be released. Now you can draw components unlimited number of times. The picture below shows an example of the shortcut category:

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Category
Shortcut

In addition, the **Toolbox** has the **Setup Toolbox** button.

Setting
Categories shortcuts

This button invokes the **Setup Toolbox** window, which is necessary to check the elements that will appear on the toolbox panel in the shortcut category. The picture shows an example of the **Setup Toolbox** window:

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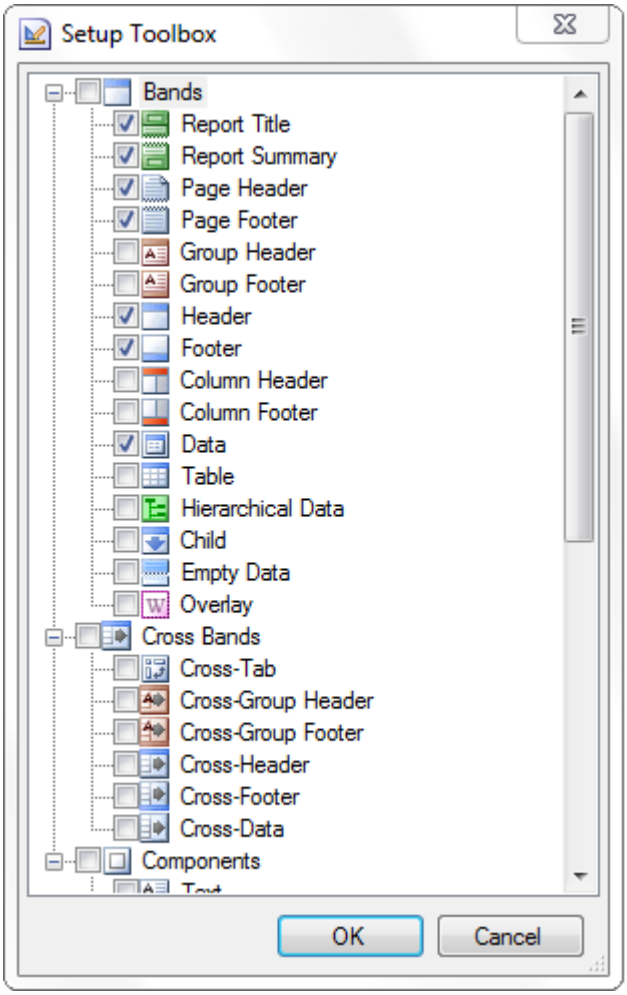


Components which are marked with the "check" in the **Setup Toolbox** window will appear on tools in the shortcut category. Accordingly, the components that are not marked will not be displayed.

## 4.11. Components Placement Wizard

When you drag components from the dictionary, toolbar, or any other container into bands of a report template, and margins of a component are beyond the margins of a band, then the **Components Placement Wizard** will be invoked. With this wizard you can define the parameters of the location of the component in the band. The picture below shows the structure of the **Components Placement Wizard**:

1 Move a component to the right side of a free space, stretching the component by the height of the

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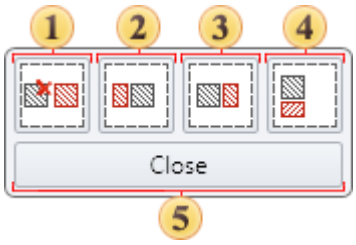
free space.
2 Move a component to the left side of a free space, stretching the component by the height of the free space.
3 Close the **Components Placement Wizard**.

## 4.12. Drag and Drop Wizard

When dragging a text component with an expression from the Dictionary and overlapping on another text component, the **Drag and Drop Wizard** will be invoked. Using this wizard it is possible to choose the way of merging the contents of the components. The picture below show how the **Drag and Drop Wizard** looks like:




1 Substitute an expression in the text component which is placed in the report template, for an expression of the text component which is being dragged;
2 Place an expression from the dragged component before an expression of the text component which is placed in the report template;
3 Place an expression from the dragged component after an expression of the text component which is placed in the report template;
4 Place an expression from the dragged component one row below an expression of the text component which is placed in the report template;
5 Close the wizard.

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# Part V

# StiWebDesigner Component

# 5. StiWebDesigner Component

The **StiWebDesigner** component is used to edit reports in the window of a browser. And there is no need to install the .Net Framework, ActiveX components and other special plug-ins on the client machine. The only requirements are a web browser and the Flash player. Using the **StiWebDesigner** it is possible to create, edit, save, view, and print reports on any computer, on any OS, where there is an internet connection, and where there is the installed web browser and Flash Player 9. The **StiWebDesigner** is non visual ASP.NET component. It can be divided in two parts: client and server. The client side is the graphic wrapping of the designer that is realized on Flex. The server side is the report generator engine and, also, a module that has functions to get queries and send data on the client side of the designer. These two parts are collected into one DLL library and represented as non visual component.

## 5.1. How It Works?

To run the web reports designer, it is required to put the **StiWebDesigner** component on the ASP.NET page and call the **Design** method of this component. When running the Web reports designer the following actions occur:

1. The .NET component reads to the memory the client Flash application from resources and runs it.

2. When it is loaded, the client side, in the AJAX mode, requests from the server side all necessary settings and the file of a report. The server side passes all this.
3. When saving a report in preview mode, the client side sends the report file as XML in the AJAX mode and the server side makes the premature processing of the report, and either sends it for saving or compile it in the window of a browser.

## 5.2. How to Run Web Reports Designer?

For running the Web report designer it is necessary to put non visual StiWebDesigner component on the form and, in the event handler of a control, to call the Design() method:

```
<cc1:StiWebDesigner ID="StiWebDesigner1" runat="server" />
```

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```
C#:

protected void Button1_Click(object sender, EventArgs e)
{
    StiWebDesigner1.Design();
}
VB.NET:

Protected Sub Button1_Click(ByVal sender As Object, ByVal e As
EventArgs)
    StiWebDesigner1.Design()
End Sub
```

For loading a report in the Web designer, the method of calling can be slightly modified:

```
C#:

protected void Button1_Click(object sender, EventArgs e)
{
    StiReport report = new StiReport();
    report.Load("D:\\SimpleList.mrt");
    StiWebDesigner1.Design(report);
}

VB.NET:

Protected Sub Button1_Click(ByVal sender As Object, ByVal e As
EventArgs)
    Dim report As StiReport = New StiReport()
    report.Load("D:\\SimpleList.mrt")
    StiWebDesigner1.Design(report)
End Sub
```

It requires a bit more complicated code to call the reports designer automatically when loading a page. It is necessary to exclude service messages which are sent by the client part of the designer to the server part:

```
C#:

protected void Page_Load(object sender, EventArgs e)
{
    if (Page != null)
    {
        string keyValue =
               Page.Request.QueryString.Get("stimulsoft_webdesigner");

        if (!IsPostBack && keyValue == null)
        {
            StiReport report = new StiReport();
            report.Load("D:\\SimpleList.mrt");
            StiWebDesigner1.Design(report);
        }
```

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```
    }
}

VB.NET:

Protected Sub Page_Load(ByVal sender As Object, ByVal e As EventArgs)
    If Not Page Is Nothing Then
        String keyValue =
               Page.Request.QueryString.Get("stimulsoft_webdesigner")

        If Not IsPostBack And keyValue Is Nothing Then
            Dim report As StiReport = New StiReport()
            report.Load("D:\\SimpleList.mrt")
            StiWebDesigner1.Design(report)
        End If
    End If
End Sub
```

## 5.3. Loading Reports to Web Designer

One of the following methods can be used to load a report to the **Web designer**:
1. Loading a report before loading the designer;
2. Loading a report after loading the designer;
3. Loading a report from the main menu of the designer.
1. **Loading a report before loading the designer**. In this way the report (for example, from a file) is loaded first and then the designer is loaded. The previously loaded report is specified as a parameter of a method of calling the designer. A code below is a sample for loading a report before loading the designer:

```
protected void Button1_Click(object sender, EventArgs e)
{
   StiReport report = new StiReport();
   report.Load("D:\\SimpleList.mrt");
   StiWebDesigner1.Design(report);
}
```

or, as a way, the previously loaded report is assigned to the designer. In this case designer loading is done with this report. See the code below:

```
protected void Button1_Click(object sender, EventArgs e)
{
   StiReport report = new StiReport();
   report.Load("D:\\SimpleList.mrt");
   StiWebDesigner1.Report = report;
   StiWebDesigner1.Design();
```

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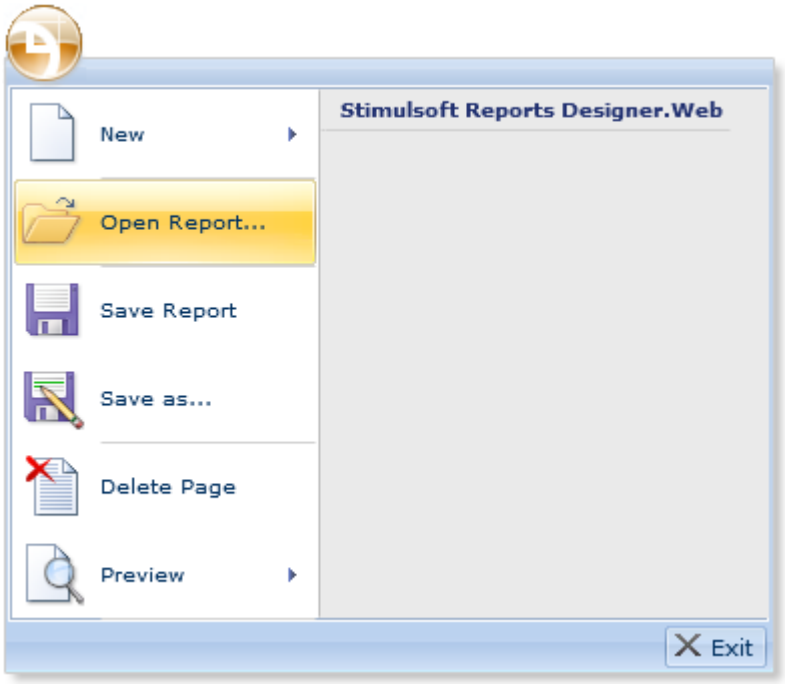
```
}
```

2. **Loading a report after loading the designer** is done using the **GetReport** event. After adding the handler to this event, it will occur each time when a report is required for the designer. In other words, after loading the **Web designer** requests a report from the server and, if the handler is added to the **GetReport** event, then in this event a report can be assigned to the designer. See the code below how to use the **GetReport** event:

```
protected void StiWebDesigner1_GetReport(object sender, StiWebDesigner.StiGetReportEventArgs
e)
   {
      StiReport report = new StiReport();
      report.Load("D:\\SimpleList.mrt");
      e.Report = report;
   }
```

3. **Loading a report from the main menu of the designer**. A report can be loaded by selecting the **Open Report** menu item. After selecting this menu item the dialog box for specifying a report for loading will appear. The picture below shows the **Web designer** main menu:




If the designer is set to the **Visual** mode, then the report should be loaded with way specified below:

```
protected void Button1_Click(object sender, EventArgs e)
{
    StiReport report = new StiReport();
```

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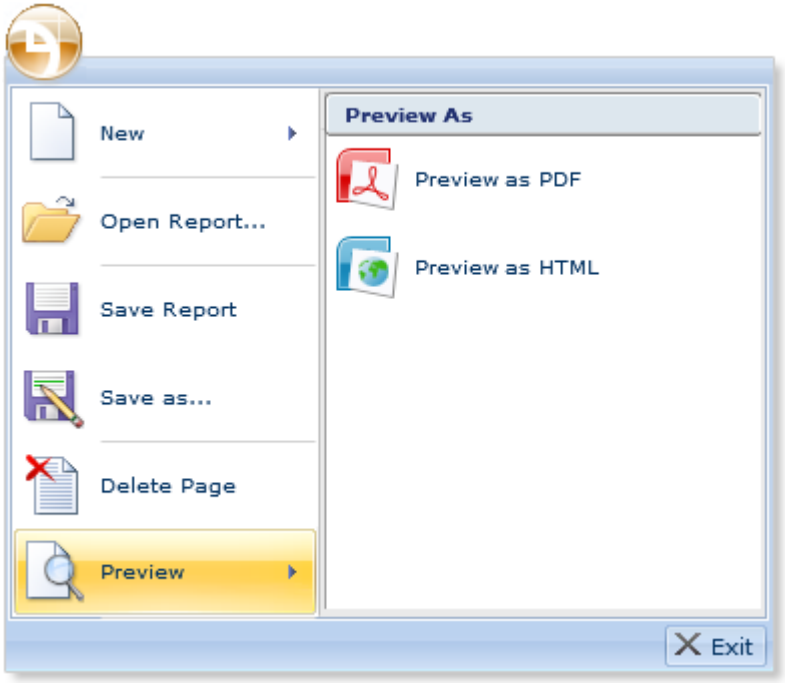
```
    report.Load("D:\\SimpleList.mrt");
    StiWebDesigner1.Report = report;
}
```

## 5.4. Report Preview

The preview function of the edited report, in the **Web designer**, has two modes: **HTML** (preview as HTML file) and **PDF** (preview as PDF file). The picture below shows the **Preview** submenu item of the **Web designer** main menu:




After selecting one of two modes, a report will be shown is the browser window. If, when report rendering, the errors occur, then alert messages will be shown in the separate browser window. To preview a report in the web designer window can be done by switching the **Preview** tab in the designer. The picture below the **Web designer** tabs:

To preview the report data are required. By default, data are taken from the **Dictionary** of the edited report. If necessary, they can be overridden. There is a sample code below using what data can be overridden:

C#:

```
protected void StiWebDesigner1_GetPreviewDataSet(object sender,
                    StiWebDesigner.StiPreviewDataSetEventArgs e)
{
   DataSet data = new DataSet();
   data.ReadXml("D:\\Demo.xml");
   data.ReadXmlSchema("D:\\Demo.xsd");
   e.PreviewDataSet = data;
}

VB.NET:

Protected Sub StiWebDesigner1_GetPreviewDataSet(ByVal sender As Object,

                ByVal e As StiWebDesigner.StiPreviewDataSetEventArgs)
   Dim data As DataSet = New DataSet()
   data.ReadXml("D:\\Demo.xml")
   data.ReadXmlSchema("D:\\Demo.xsd")
   e.PreviewDataSet = data
End Sub
```

As seen from code, data are taken from **XML** and **XSD** files. The same way exists for other data sources.

## 5.5. Changing Report Settings BeforeRendering

If it is necessary before the report rendering to change the report parameters or user settings in the report, you can add a handler to the **ProcessReportBeforeRender** event. This event occurs immediately before the report rendering. For example, it is necessary to change the **Report Name** before report rendering. To do this, add the handler to the **ProcessReportBeforeRender** event, define the value of the **ReportName** property, where the value of the property is the name of the report. For example, add the following code to the code project:

```
protected void StiWebDesigner1_ProcessReportBeforeRender(object sender, StiWebDesigner.
                                        StiProcessReportBeforeRenderEventArgs e)
  {
     e.Report.ReportName = "Employees";
  }
```

Now, before report rendering, the name will be changed from the existing one to **Report 2010**. Thus, using the **ProcessReportBeforeRender** event, the user can change custom options before rendering.

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## 5.6. Saving Reports

Two events are used for the processing of a saved report in the Web-designer. These are **SaveReport** and **SaveReportAs**. The **SaveReport** event occurs when you click on the **Save Report** button or when you click on the **Save Report** item of the main menu in the designer. The **SaveReportAs** event occurs when you select the **Save As** item of the main menu in the designer. When the user is not signed to this event, then, by default, a built-in Web-designer dialog box to save the report is called. If the user is assigned to this event, then the dialog box will not appear but the event will appear, i.e. saving is done by the server. See the code below:

```
C#:

protected void StiWebDesigner1_SaveReport(object sender, StiWebDesigner.
StiSaveReportEventArgs e)
{
    StiReport report = e.Report;
}

VB.NET:

Protected Sub StiWebDesigner1_SaveReport(ByVal sender As Object,
                    ByVal e As StiWebDesigner.StiSaveReportEventArgs)
    Dim report As StiReport = e.Report
End Sub
```

After that, the ways and place to save the report are identified by the user. For example, the report can be saved to a string in the database. Below is the code to save a report to the string:

```
C#:

protected void StiWebDesigner1_SaveReport(object sender, StiWebDesigner.
StiSaveReportEventArgs e)
{
    StiReport report = e.Report;
    string str = report.SaveToString();
}

VB.NET:

Protected Sub StiWebDesigner1_SaveReport(ByVal sender As Object,
                    ByVal e As StiWebDesigner.StiSaveReportEventArgs)
    Dim report As StiReport = e.Report
    Dim str As String =  report.SaveToString()
End Sub
```

Subscription to the **SaveReportAs** event is made by analogy with the **SaveReport** event. In the event of saving a report you can use the **ErrorCode** property of the event argument. The **ErrorCode**

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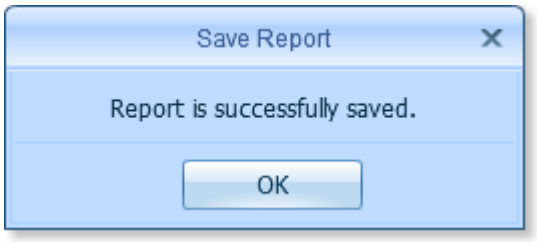
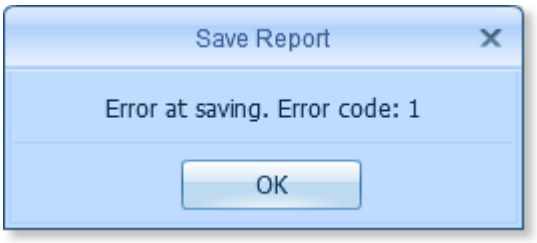
property can take numeric values. By default, this property is set to **-1**. This means that, when saving a report, the report event occurs, but nothing will be output in the Web-designer. If this property is set to **0**, then the user will be notified about that the report is saved successfully. The picture below shows a notification window which indicates successful report saving:




If the **ErrorCode** property will be greater than **0**, then the error message is displayed with its source code where the error is the value of the **ErrorCode**. The picture below shows a window with the error code **1**:




Report saving occurs in the background mode, i.e. visually it will not be displayed. If you need to visually manage the process of saving the report, you may change the **SaveMode** property of the **StiWebDesigner** component on one of two values: **Visible** or **NewWindow**:

```
<cc1:StiWebDesigner ID="StiWebDesigner1" runat="server"
OnSaveReport="StiWebDesigner1_SaveReport" SaveMode="NewWindow" />
```

If the **SaveMode** property is set to **Visible**, the process of saving the report will be displayed in the current browser window. If the property is set to **NewWindow**, then the process of saving the report will be displayed in a new browser window. By default, this property is set to **Hidden**, i.e. the process of saving the report is not displayed.

## 5.7. Web Designer Settings

Setting the **Web designer** can be done using the static properties, which are described in the **Stimulsoft.Report.Web.StiWebDesignerOptions** class. Static properties of the **Web designer** can be divided into following groups: Connection, Main menu, Zooming, Viewer, Additional.

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## 5.7.1. Connection

The static properties described below belong to the **StiWebDesignerOptions.Connection** group and responsible for option of connection the client and server sides:

- The **ClientRequestTimeout** property sets time (in seconds) that the client part will wait the response from the server side. The default value is 10 seconds;
- The **ClientRepeatCount** property sets the number of repeats of requests of the server side to the client side, when getting errors of obtaining data. The default value is 2 repeats;
- The **RelativeUrls** property allows using the relative **Url.** If the **RelativeUrls** is set to **false**, then the absolute **Url** is used. If the **RelativeUrls** is set to **true,** then the relative **Url** is used. By default, the value is set to **false**. A sample of the absolute and relative **Urls** is shown below**:**

http://localhost:4444/WebDesignerDemo/WebDesigner.aspx is an absolute **Url,** the **RelativeUrls** property is set to **false;**
/WebDesignerDemo/WebDesigner.aspx is a relative **Url,** the **RelativeUrls** property is set to **true** .

## 5.7.2. Main Menu

The main menu of the **Web** designer can be setup according to user's requirements. This group of static properties **StiWebDesignerOptions.Menu** allows enabling/disabling main menu or submenu items.

- The **NewEnabled** property is used to enable/disable the **New** menu item. If the **NewEnabled** property is set to **true**, then this menu item is enabled and available for a user. If this property is set to **false** then this submenu item is disabled and not available for a user. By default, this property is set to **true**. The **New** menu contains submenus such as: **New Report**, **New Report With Wizard**, **New Page**. The picture below shows the **New** submenu item:

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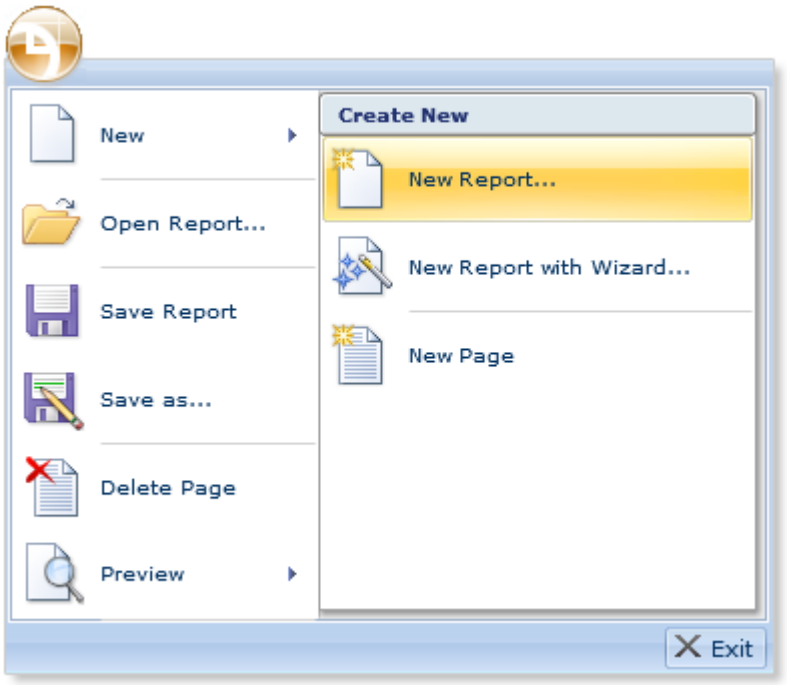


These submenu items can be enabled/disabled using the following static properties:

1) The **NewReport** property is used to enable/disable the **New Report** submenu item. If the **NewReport** property is set to **true**, then this submenu item is enabled and available for a user. If this property is set to **false** then this submenu item is disabled and not available for a user. By default, this property is set to **true**;
2) The **NewReportWithWizard** property is used to enable/disable the **New Report With Wizard** submenu item. If the **NewReportWithWizard** property is set to **true**, then this submenu item is enabled and available for a user. If this property is set to **false** then this submenu item is disabled and not available for a user. By default, this property is set to **true**;
3) The **NewPage** property is used to enable/disable the **New Page** submenu item. If the **NewPage** property is set to **true**, then this submenu item is enabled and available for a user. If this property is set to **false** then this submenu item is disabled and not available for a user. By default, this property is set to **true**;

- The **OpenReport** property is used to enable/disable the **Open Report** menu item. If the **OpenReport** property is set to **true**, then this menu item is enabled and available for a user. If this property is set to **false** then this submenu item is disabled and not available for a user. By default, this property is set to **true**;

- The **SaveReport** property is used to enable/disable the **Save Report** menu item. If the **SaveReport** property is set to **true**, then this menu item is enabled and available for a user. If this property is set to **false** then this submenu item is disabled and not available for a user. By default, this property is set to **true**;

- The **SaveAs** property is used to enable/disable the **Save As** menu item. If the **SaveAs** property is set to **true**, then this menu item is enabled and available for a user. If this property is set to **false** then this submenu item is disabled and not available for a user. By default, this property is set to **true**;

- The **DeletePage** property is used to enable/disable the **Delete Page** menu item. If the

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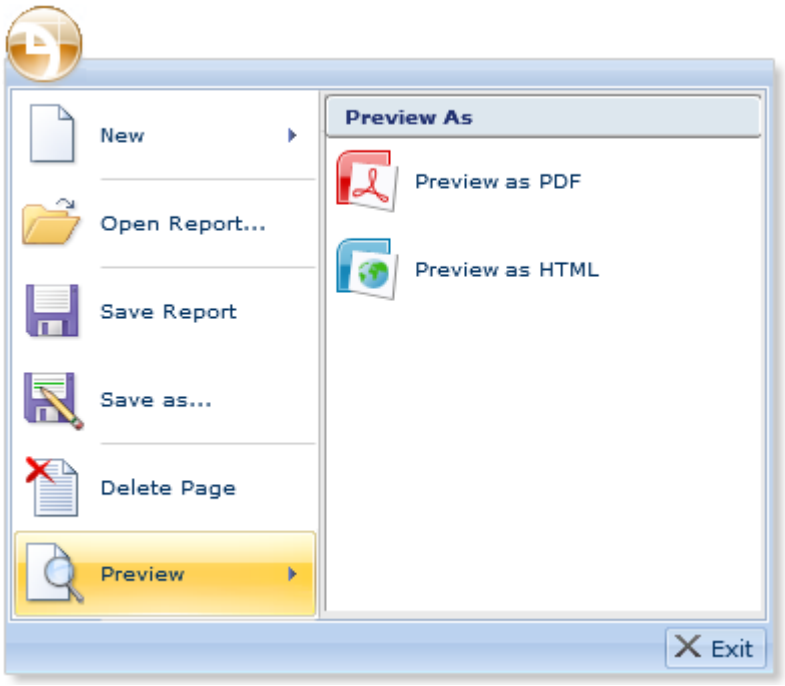
**DeletePage** property is set to **true**, then this menu item is enabled and available for a user. If this property is set to **false** then this submenu item is disabled and not available for a user. By default, this property is set to **true**;

- The **Preview** property is used to enable/disable the **Preview** menu item. If the **Preview** property is set to **true**, then this menu item is enabled and available for a user. If this property is set to **false** then this submenu item is disabled and not available for a user. By default, this property is set to **true**. The **Preview** menu item contains a submenu which contains the following items: **Preview As Pdf, Preview As Html.** The picture below shows the **Preview** submenu item:




These submenu items can be enabled/disabled using the following static properties:

1) The **PreviewAsPdf** property is used to enable/disable the **Preview As Pdf** submenu item. If the **PreviewAsPdf** property is set to **true**, then this menu item is enabled and available for a user. If this property is set to **false** then this submenu item is disabled and not available for a user. By default, this property is set to **true**.
2) The **PreviewAsHtml** property is used to enable/disable the **Preview As Html** submenu item. If the **PreviewAsHtml** property is set to **true**, then this menu item is enabled and available for a user. If this property is set to **false** then this submenu item is disabled and not available for a user. By default, this property is set to **true**.

## 5.7.3. Zooming Static Properties

The **Zoom** group of static properties has one static property: **StiZoomMode.** Depending on the values of this property it is possible to set options of report template zoom. This property has the following values: **PageWidth**, **PageHeight**, **OnePage**, **Zoom25**, **Zoom50**, **Zoom75**, **Zoom100**, **Zoom150**, **Zoom200.**

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- The **PageWidth** value sets zoom by **Page Width**. So the width of the report template matches the width of the window of the web designer;
- The **PageHeight** value sets zoom by **Page Height**. So the height of the report template matches the height of the window of the web designer;
- The **OnePage** value sets zoom by **One Page**. So the entire page of the report template fits in the window of the web designer;
- The **Zoom25**, **Zoom50**, **Zoom75**, **Zoom100**, **Zoom150**, **Zoom200** values set zoom level of the report template which is **25%, 50%, 75%, 100%, 150%, 200%**.

## 5.7.4. Viewer Static Properties

A group of **StiWebDesignerOptions.Viewer.Toolbar** static properties is described below:

- The **ShowZoom** property is used to show/hide the zoom panel. If the **ShowZoom** property is set to **true**, then the zoom panel will be shown. If the **ShowZoom** property is set to **false**, then the zoom panel will be hidden. By default this property is set to **true**;

- The **ShowPrintButton** property is used to show/hide the **Print** button. If the **ShowPrintButton** property is set to **true**, then the **Print** button is shown. If the **ShowPrintButton** property is set to **true**, then the **Print** button is hidden. By default this property is set to **true**;

- The **ShowOpenButton** property is used to show/hide the **Open** button. If the **ShowOpenButton** property is set to **true**, then the **Open** button is shown. If the **ShowOpenButton** property is set to **true**, then the **Open** button is hidden. By default this property is set to **true**;

- The **ShowSaveButton** property is used to show/hide the **Save** button. If the **ShowSaveButton** property is set to **true**, then the **Save** button is shown. If the **ShowSaveButton** property is set to **true**, then the **Save** button is hidden. By default this property is set to **true**;

- The **ShowSendEMailButton** property is used to show/hide the **SendEMail** button. If the **ShowSendEMailButton** property is set to **true**, then the **SendEMail** button is shown. If the **ShowSendEMailButton** property is set to **true**, then the **SendEMail** button is hidden. By default this property is set to **true**;

- The **ShowPageNewButton** property is used to show/hide the **Page New** button. If the **ShowPageNewButton** property is set to **true**, then the **Page New** button is shown. If the **ShowPageNewButton** property is set to **true**, then the **Page New** button is hidden. By default this property is set to **true**;

- The **ShowPageDeleteButton** property is used to show/hide the **Page Delete** button. If the **ShowPageDeleteButton** property is set to **true**, then the **Page Delete** button is shown. If the **ShowPageDeleteButton** property is set to **true**, then the **Page Delete** button is hidden. By default this property is set to **true**;

- The **ShowPageSizeButton** property is used to show/hide the **Page Size** button. If the **ShowPageSizeButton** property is set to **true**, then the **Page Size** button is shown. If the **ShowPageSizeButton** property is set to **true**, then the **Page Size** button is hidden. By default

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this property is set to **true**;

- The **ShowBookmarksButton** property is used to show/hide the **Bookmarks** button. If the **ShowBookmarksButton** property is set to **true**, then the **Bookmarks** button is shown. If the **ShowBookmarksButton** property is set to **true**, then the **Bookmarks** button is hidden. By default this property is set to **true**;

- The **ShowThumbnailsButton** property is used to show/hide the **Thumbnails** button. If the **ShowThumbnailsButton** property is set to **true**, then the **Thumbnails** button is shown. If the **ShowThumbnailsButton** property is set to **true**, then the **Thumbnails** button is hidden. By default this property is set to **true**;

- The **ShowFindButton** property is used to show/hide the **Find** button. If the **ShowFindButton** property is set to **true**, then the **Find** button is shown. If the **ShowFindButton** property is set to **true**, then the **Find** button is hidden. By default this property is set to **true**;

- The **ShowEditButton** property is used to show/hide the **Edit** button. If the **ShowEditButton** property is set to **true**, then the **Edit** button is shown. If the **ShowEditButton** property is set to **true**, then the **Edit** button is hidden. By default this property is set to **true**;

- The **ShowFirstPageButton** property is used to show/hide the **First Page** button. If the **ShowFirstPageButton** property is set to **true**, then the **First Page** button is shown. If the **ShowFirstPageButton** property is set to **true**, then the **First Page** button is hidden. By default this property is set to **true**;

- The **ShowPreviousPageButton** property is used to show/hide the **Previous Page** button. If the **ShowPreviousPageButton** property is set to **true**, then the **Previous Page** button is shown. If the **ShowPreviousPageButton** property is set to **true**, then the **Previous Page** button is hidden. By default this property is set to **true**;

- The **ShowGoToPageButton** property is used to show/hide the **Go to Page** button. If the **ShowGoToPageButton** property is set to **true**, then the **Go to Page** button is shown. If the **ShowGoToPageButton** property is set to **true**, then the **Go to Page** button is hidden. By default this property is set to **true**;

- The **ShowNextPageButton** property is used to show/hide the **Next Page** button. If the **ShowNextPageButton** property is set to **true**, then the **Next Page** button is shown. If the **ShowNextPageButton** property is set to **true**, then the **Next Page** button is hidden. By default this property is set to **true**;

- The **ShowLastPageButton** property is used to show/hide the **Last Page** button. If the **ShowLastPageButton** property is set to **true**, then the **Last Page** button is shown. If the **ShowLastPageButton** property is set to **true**, then the **Last Page** button is hidden. By default this property is set to **true**;

- The **ShowPageViewModeSingleButton** property is used to show/hide the **Single Page** button. If the **ShowPageViewModeSingleButton** property is set to **true**, then the **Single Page** button is shown. If the **ShowPageViewModeSingleButton** property is set to **true**, then the **Single Page** button is hidden. By default this property is set to **true**;

- The **ShowPageViewModeContinuousButton** property is used to show/hide the **Continuous**

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button. If the **ShowPageViewModeContinuousButton** property is set to **true**, then the **Continuous** button is shown. If the **ShowPageViewModeContinuousButton** property is set to **true**, then the **Continuous** button is hidden. By default this property is set to **true**;

- The **ShowPageViewModeMultipleButton** property is used to show/hide the **Multiple Pages** button. If the **ShowPageViewModeMultipleButton** property is set to **true**, then the **Multiple Pages** button is shown. If the **ShowPageViewModeMultipleButton** property is set to **true**, then the **Multiple Pages** button is hidden. By default this property is set to **true**;

### 5.7.5. Additional Viewer Static Properties

This group of **StiWebDesignerOptions** static properties allows enabling/disabling dictionary and report template editing, showing/hiding tabs of the **Web designer**.

- The **ModifyDictionary** property is used to enable/disable **Dictionary** editing. If the **ModifyDictionary** property is set to **true**, then editing is enabled. If the **ModifyDictionary** property is set to **false**, then editing is disabled. By default this property is set to **true;**

- The **ModifyConnections** property is used to enable/disable **Connections** editing. If the **ModifyDictionary** property is set to **true**, then editing is enabled. If the **ModifyDictionary** property is set to **false**, then editing is disabled. By default this property is set to **true;**

- The **ModifyDataSources** property is used to enable/disable **Data Sources** editing. If the **ModifyDataSources** property is set to **true**, then editing is enabled. If the **ModifyDataSources** property is set to **false**, then editing is disabled. By default this property is set to **true;**

- The **ModifyVariables** property is used to enable/disable **Variables** editing. If the **ModifyVariables** property is set to **true**, then editing is enabled. If the **ModifyVariables** property is set to **false**, then editing is disabled. By default this property is set to **true;**

- The **ModifyTemplate** property is used to enable/disable loaded **Template** editing. If the **ModifyTemplate** property is set to **true**, then editing is enabled. If the **ModifyTemplate** property is set to **false**, then editing is disabled. By default this property is set to **true;**

- The **AllowScale** property is used to enable/disable scale changing. If the **AllowScale** property is set to **true**, then changing is enabled. If the **AllowScale** property is set to **false**, then changing is disabled. By default this property is set to **true;**

- The **CodeTabVisible** property is used to show/hide the **Code** tab. If the **CodeTabVisible** property is set to **true**, then the code tab will be shown. If the **CodeTabVisible** property is set to **false**, then the code tab will be hidden. By default this property is set to **true;**

- The **DictionaryTabVisible** property is used to show/hide the **Dictionary** tab. If the **DictionaryTabVisible** property is set to **true**, then the code tab will be shown. If the **DictionaryTabVisible** property is set to **false**, then the code tab will be hidden. By default this property is set to **true;**

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- The **ExitButtonVisible** property is used to show/hide the **Exit** button in the main menu. If the **ExitButtonVisible** property is set to **true**, then the button tab will be shown. If the **ExitButtonVisible** property is set to **false**, then the button tab will be hidden. By default this property is set to **true.**

## 5.8. Web Designer Properties

**Web designer** properties are described below:

1. The **BrowserTitle** property is used to change titles of a browser. This property may get string values. By default, the title of a browser is **Report Alias**, and if it is absent, it is a **Report Name**.
2. Saving a report occurs in the background mode, so it will not be seen. If you need to show the process of saving a report, you need to set the **SaveMode** property of the **StiWebDesigner** component to one of the following values: **Visible** or **NewWindow.** If the **SaveMode** property is set to **Visible**, then process will be displayed in the current window of the designer. If the **SaveMode** property is set to **NewWindow**, then the saving process will be shown in a new window of the browser. By defauly this property is set to **Hidden**, the process of saving is not shown.
3. The **SaveAsMode** property, has three values: **Hidden**, **Visible** or **NewWindow**. The difference of this property is that, it works when the **SaveReportAs** event occurs, and the **SaveMode** property when the **SaveReport** event occurs.
4. The **DataEncryption** property is used to enable/disable data encryption. If the **DataEncryption** property is set to **false**, then data are not decrypted. If the **DataEncryption** property is set to **true**, then data a decrypted. By default, this property is set to **false**.
5. The **DataCompression** property is used to enable/disable data compression. If the **DataCompression** property is set to **false**, then data are not compressed. If the **DataCompression** property is set to **true**, then data are compressed. By default, this property is set to **true**.
6. The **UseCache** property allows using caching on the server when loading a report. If the **UseCache** property is set to **true**, then caching is used when loading a report, i.e. a report is loaded to the **Web designer** from the server cache. If the **UseCache** property is set to **false**, then caching is not used when loading a report. In this case for loading the report in the **Web designer** the **GetReport** event should be used. By default, this property is set to **true**.
7. The **ServerTimeout** property is used to define the time of a report in the report cache. By default, this property is set to **"00:10:00"**, this means that the report is stored **10** minutes in the server cache and then it is removed.
8. The **ExitUrl** property is used to assign **Url**, to what user will be redirected when closing the **Web designer** via clicking the **Exit** button of the main menu. By default, a user will be redirected on a page from what the **Web designer** is run.
9. The **ShowWizardOnStartup** property is used to show the report rendering wizard window when running the **Web designer**. If the **ShowWizardOnStartup** property is set to **false**, then, when running the **Web designer**, the report rendering wizard window will not be shown. If the **ShowWizardOnStartup** property is set to **true**, then, when running the **Web designer**, the report rendering wizard window will be shown. By default, this property is set to **false**.
10. The **AppCacheDirectory** property is used to define the path to the directory on the server, in what, caching files of the **Flash**-application will occur. For this, you should set full access of the **ASP.NET** application to this directory.

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## 5.9. Changing Web Designer Properties from Code

The **PreInit** event is used to change **Web designer** properties. This event occurs before initialization of the designer, i.e. before passing Web designer properties to the client part of an application. In other words, to change the Web designer properties from code in it necessary to add the handler to the **PreInit** event. The code below shows how to add the handler to the PreInit event and set the Localization property to en:

```
protected void StiWebDesigner1_PreInit(object sender, StiWebDesigner.StiPreInitEventArgs e)
  {
     e.WebDesigner.Localization = "en";

  }
```

Now, when running the **Web designer**, it will be localized in English.
For example, we need to change the browser title. By default, the browser title is the value of the **Report Alias** property. If the value is not set then the **Report Name** is taken. To change the browser title it is necessary to add the code below to the event:

```
protected void StiWebDesigner1_PreInit(object sender, StiWebDesigner.StiPreInitEventArgs e)
  {
      e.WebDesigner.BrowserTitle = "Stimulsoft";

  }
```

Now, when running the **Web designer**, **Stimulsoft** word will be shown as a report title.

## 5.10. Web Reports Designer Localization

The Web reports designer interface can be localized in any of 24 available languages. It is necessary to create the **Localization** folder in the root catalogue of your Web-project and copy all necessary . xml localization files. After loading the web reports designer, the list of languages will be available in its menu.
The path to the Localization folder can be changed. The **DirectoryLocalization** property is used for this:

```
<cc1:StiWebDesigner ID="StiWebDesigner1" runat="server"
                DirectoryLocalization="\\Files\\Languages\\" />
```

Also, it is possible to specify which language can be used right after the web reports designer

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(default localization). The following code shows how to do this. (it is necessary to specify the .xml file in the **Localization** property):

```
<cc1:StiWebDesigner ID="StiWebDesigner1" runat="server"
                Localization="en.xml" />
```

## 5.11. Visible Mode

When adding a **StiWebDesigner** component on a page of a **Web** applications, it will be added as a non-visual component and calling the designer is done using the **Design ()** method. If you want to place the Web designer in a specific location on a web page with a certain size, you should use the visual designer mode. Designer mode depends on the value of the **Visible** property of the **StiWebDesigner** component. By default, this property is set to **false**, so the designer will be a non-visual component. If the **Visible** property set to **true**, it the visual designer mode will be enabled.

```
<cc1:StiWebDesigner ID="StiWebDesigner1" runat="server" Visible="True" /
>
```

If the designer is in visual mode, then the report should be loaded with the following method:

```
protected void Button1_Click(object sender, EventArgs e)
{
    StiReport report = new StiReport();
    report.Load("D:\\SimpleList.mrt");
    StiWebDesigner1.Report = report;
}
```

If to call the **Design ()** method in the visual mode of the designer, then loaded report is displayed on the full screen in the browser.

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# Part VI

# StiWebDesignerSL

# 6. StiWebDesignerSL

The **StiWebDesignerSL** component is designed to edit reports in a window of a browser. You do not need to install **.NET Framework**, **ActiveX** components or other special plug-ins on the client. All you need is a Web browser and Silverlight Runtime. With **StiWebDesignerSL** it is possible to create, edit, save, view and print reports on any computer with any operating system, where there is Internet access and a Web browser with installed Silverlight Runtime version 4. **StiWebDesignerSL** is an ASP.NET component. It can be divided into two parts: client and server. Client side is a graphical part of the designer, realized under the Silverlight technology. Server side is a report engine and a module that performs the functions of receiving requests and passing data to the client side of the designer. These two parts are assembled into a single dll library and presented as a component.

## 6.1. How It Works?

To run the web reports designer, it is required to put the **StiWebDesignerSL** component on the ASP.NET page. Then, in the **PageLoad** event of a page, you need to assign a report to the **Report** property of a component. An ASP.NET component will read the Silverlight-client application into memory from resources and run it. Being loaded, the client side will request all necessary settings and a report file from the server side. The server part will pass this. When you save or preview the report, the client side sends the report as an XML the file, and server will perform preliminary processing of the report, and transfer this file for saving, or compiles it and displays in a browser window.

## 6.2. How to Run Web Reports Designer?

For running the Web report designer it is necessary to put non visual **StiWebDesignerSL** component on the form and, in the event handler of a control, to call the **Design()** method:

```
ASP.NET:

<cc1:StiWebDesignerSL ID="StiWebDesignerSL1" runat="server" />
```

```
C#:

protected void Button1_Click(object sender, EventArgs e)
{
    StiWebDesignerSL1.Design();
}
```

For loading a report in the Web designer, the method of calling can be slightly modified:

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```
C#:

protected void Button1_Click(object sender, EventArgs e)
{
    StiReport report = new StiReport();
    report.Load("D:\\SimpleList.mrt");
    StiWebDesignerSL1.Design(report);
}
```

## 6.3. Loading Reports to Web Designer

One of the following methods can be used to load a report to the **Web designer**:
1. Loading a report before loading the designer;
2. Loading a report after loading the designer;
3. Loading a report from the main menu of the designer.
1. **Loading a report before loading the designer**. In this way the report (for example, from a file) is loaded first and then the designer is loaded. The previously loaded report is specified as a parameter of a method of calling the designer. A code below is a sample for loading a report before loading the designer:

```
protected void Button1_Click(object sender, EventArgs e)
{
   StiReport report = new StiReport();
   report.Load("D:\\SimpleList.mrt");
   StiWebDesignerSL1.Design(report);
}
```

or, as a way, the previously loaded report is assigned to the designer. In this case designer loading is done with this report. See the code below:

```
protected void Button1_Click(object sender, EventArgs e)
{
   StiReport report = new StiReport();
   report.Load("D:\\SimpleList.mrt");
   StiWebDesignerSL1.Report = report;
   StiWebDesignerSL1.Design();
}
```

2. **Loading a report after loading the designer** is done using the **GetReport** event. After adding the handler to this event, it will occur each time when a report is required for the designer. In other

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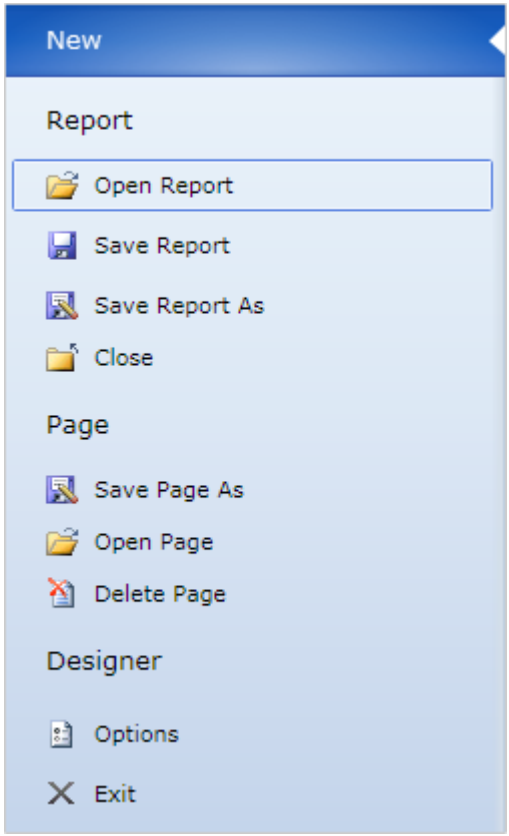
words, after loading the **Web designer** requests a report from the server and, if the handler is added to the **GetReport** event, then in this event a report can be assigned to the designer. See the code below how to use the **GetReport** event:

```
protected void StiWebDesignerSL1_GetReport(object sender, StiWebDesignerSL.
StiGetReportEventArgs e)
    {
        StiReport report = new StiReport();
        report.Load("D:\\SimpleList.mrt");
        e.Report = report;
    }
```

3. **Loading a report from the main menu of the designer**. A report can be loaded by selecting the **Open Report** menu item. After selecting this menu item the dialog box for specifying a report for loading will appear. The picture below shows the **Web designer** main menu




Also the designer supports loading reports and other report items (for example, images) using **Drag&Drop**.

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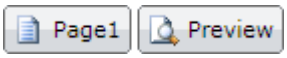
## 6.4. Report Preview

You can preview the report in the window of the Web-designer by selecting the **Preview** tab in the designer. The picture below shows tabs of the Web-designer:




Data are required to preview a rendered report. By default, data specified in the **Dictionary** of the edited report are taken. If it is necessary, they can be overridden. Below is a sample code with which overrides the data:

```
C#:

protected void StiWebDesignerSL1_GetPreviewDataSet(object sender,
                    StiWebDesignerSL.StiPreviewDataSetEventArgs e)
{
    DataSet data = new DataSet();
    data.ReadXml("D:\\Demo.xml");
    data.ReadXmlSchema("D:\\Demo.xsd");
    e.PreviewDataSet = data;
}
```

As can be seen from the code, the data is taken from XML and XSD files. In the same way you can substitute the data from other data sources.

## 6.5. Web Designer Settings

Setting the **Web designer** can be done using the static properties, which are described in the **Stimulsoft.Report.Web.StiWebDesignerSLOptions** class. Static properties of the **Web designer** can be divided into following groups: Main menu, Zooming, Viewer.

### 6.5.1. Main Menu

The main menu of the **Web** designer can be setup according to user's requirements. This group of static properties **StiWebDesignerSLOptions.Menu** allows enabling/disabling the main menu or submenu items

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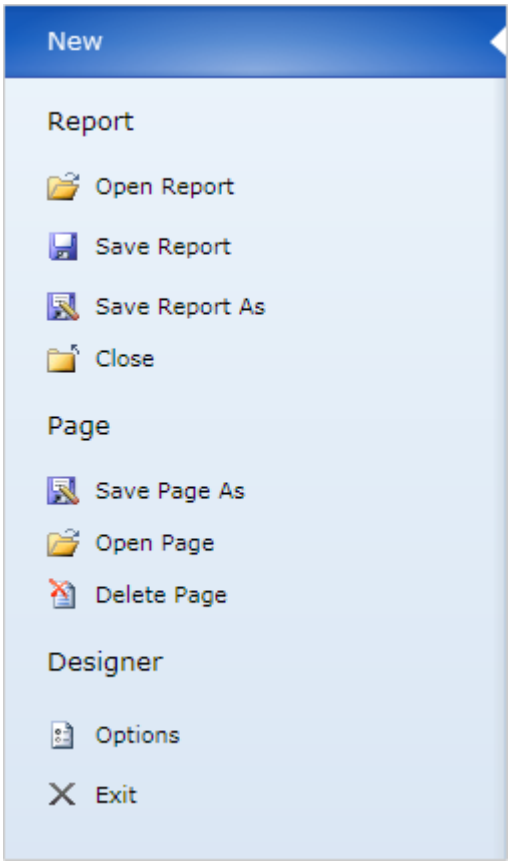


- The **SaveReportAsPageEnabled** property enables/disables the **Save Report As...** menu item. If the **SaveReportAsPageEnabled** property is set to **true**, then the menu item is enabled and can be available for a user. If **false** then it is disabled and cannot be available for a user. By default the property is set to **true;**

- The **OpenReportEnabled** property enables/disables the **Open Report** menu item. If the **OpenReportEnabled** property is set to **true**, then the menu item is enabled and can be available for a user. If **false** then it is disabled and cannot be available for a user. By default the property is set to **true;**

- The **CloseEnabled** property enables/disables the **Close** menu item. If the **CloseEnabled** property is set to **true**, then the menu item is enabled and can be available for a user. If **false** then it is disabled and cannot be available for a user. By default the property is set to **true;**

- The **SavePageAsEnabled** property enables/disables the **Save Page As...** menu item. If the **SavePageAsEnabled** property is set to **true**, then the menu item is enabled and can be available for a user. If **false** then it is disabled and cannot be available for a user. By default the property is set to **true**;

- The **OpenPageEnabled** property enables/disables the **Open Page...** menu item. If the **OpenPageEnabled** property is set to **true**, then the menu item is enabled and can be available for a user. If **false** then it is disabled and cannot be available for a user. By default the property is set to **true**;

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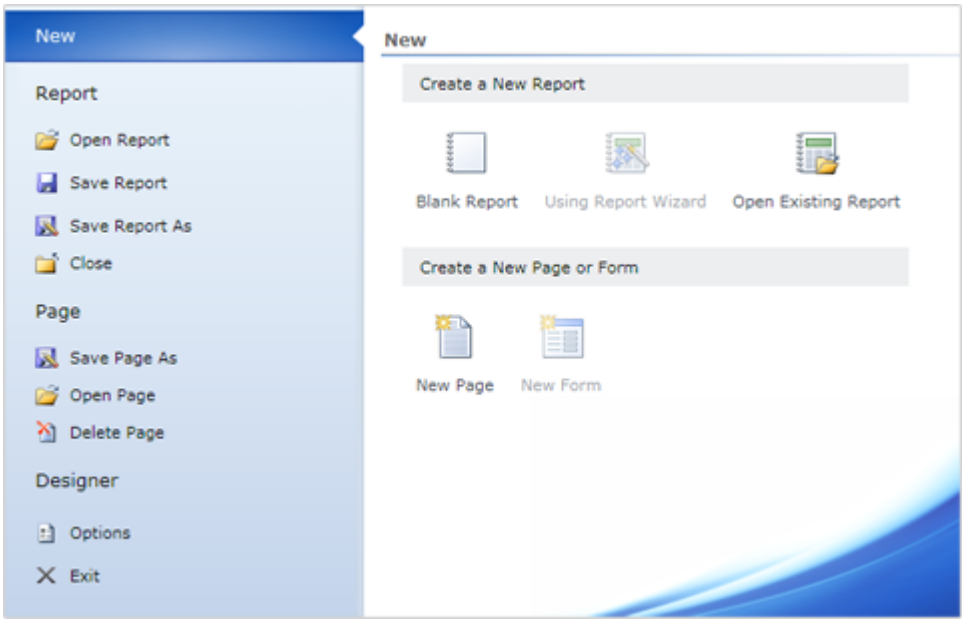
- The **DeletePageEnabled** property enables/disables the **Delete Page** menu item. If the **DeletePageEnabled** property is set to **true**, then the menu item is enabled and can be available for a user. If **false** then it is disabled and cannot be available for a user. By default the property is set to **true**;

- The **NewEnabled** property enables/disables the **New** menu item. If the **NewEnabled** property is set to **true**, then the menu item is enabled and can be available for a user. If **false** then it is disabled and cannot be available for a user. By default the property is set to **true.** The **New** menu item contains the submenu, where the submenu item are present. They are: **New Report, New Report With Wizard, New Page.** The picture below is shows the submenu of the **New** item:




- The **ReportEnabled** property enables/disables the **Report** menu item. If the **ReportEnabled** property is set to **true**, then the menu item is enabled and can be available for a user. If **false** then it is disabled and cannot be available for a user. By default the property is set to **true**. This menu item contains the submenu shown on the picture below:

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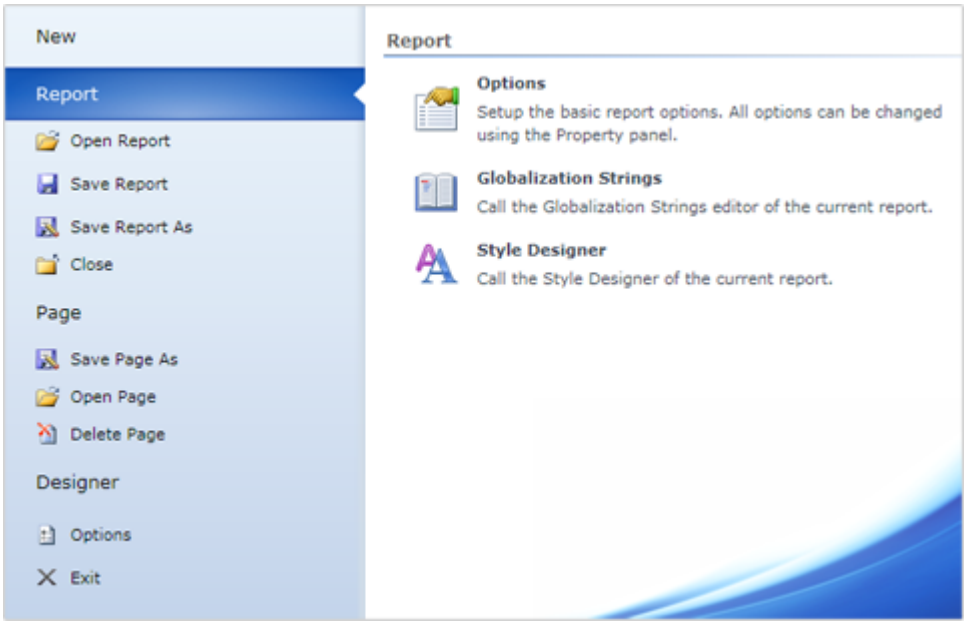
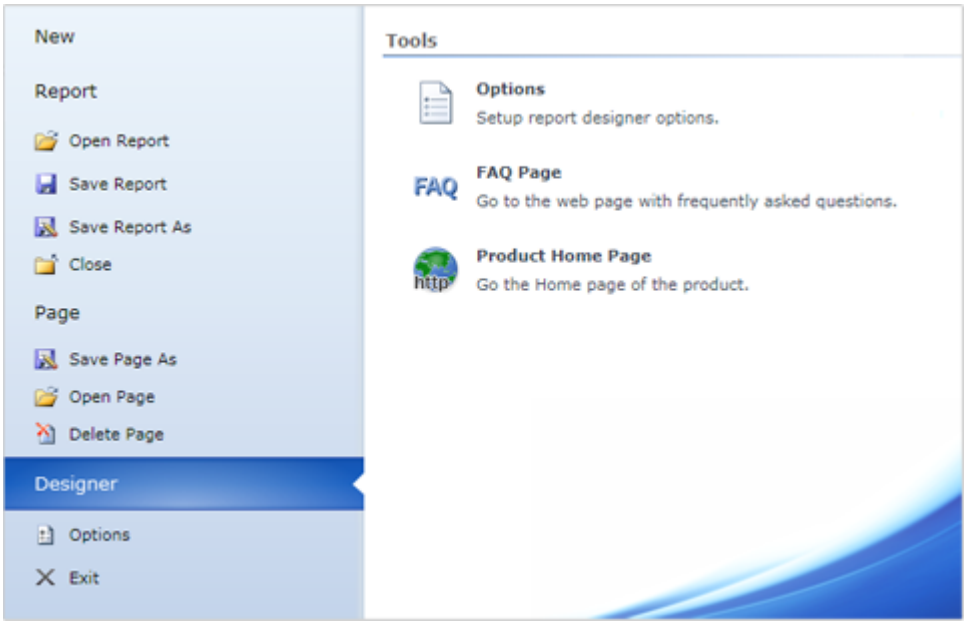



- The **DesignerEnabled** property enables/disables the **Designer** menu item. If the **DesignerEnabled** property is set to **true**, then the menu item is enabled and can be available for a user. If **false** then it is disabled and cannot be available for a user. By default the property is set to **true**. This menu item contains the submenu shown on the picture below:




- The **OptionsEnabled** property enables/disables the **Options** menu item. If the **OptionsEnabled** property is set to **true**, then the menu item is enabled and can be available for a user. If **false** then it is disabled and cannot be available for a user. By default the property is set to **true**.;

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## 6.5.2. Zooming

The properties of the **StiWebDesignerSL** Zoom panel are described below:

- The **ShowPageViewContinuousModeButton** property is used to show/hide the **Continuous** button. If the **ShowPageViewContinuousModeButton** property is set to **true**, then the **Continuous** button will be shown. If the **ShowPageViewContinuousModeButton** property is set to **false**, then the **Continuous** button will be hidden. By default, this property is set to **true**;

- The **ShowPageViewMultipleModeButton** property is used to show/hide the **Multiple Pages** button. If the **ShowPageViewMultipleModeButton** property is set to **true**, then the **Multiple Pages** button will be shown. If the **ShowPageViewMultipleModeButton** property is set to **false** , then the **Multiple Pages** button will be hidden. By default, this property is set to **true**;

- The **ShowSliderZoomControl** property is used to show/hide the **Zoom** slider. If the **ShowZoom** property is set to **true**, then the **Zoom** slider will be shown. If the **ShowZoom** property is set to **false**, then the **Zoom** slider will be hidden. By default, this property is set to **true.**

- The **ZoomMode** is used to change report zoom. This property has the following values: **Default**, **OnePage**, **TwoPages**, **PageWidth**:
  - The **Default** value sets previously saved zoom of a report in **WebDesignerSL**. So, if a report was saved with 37% zoom then, when opening it next time, 37% zoom of a report showing remains;
  - The **PageWidth** value sets zoom by **Page Width**. So the width of the report template matches the width of the window of the web designer;
- The **PageHeight** value sets zoom by **Page Height**. So the height of the report template matches the height of the window of the web designer;
- The **OnePage** value sets zoom by **One Page**. So the entire page of the report template fits in the window of the web designer.

- The **Zoom** provides an opportunity to zoom in the designer. This property can take any value from **0** to **100**, where the value of the **Zoom** is the zoom percentage. For example, if the **Zoom** property is set to **70**, the zoom in the designer will be equal to **70** percent.

## 6.5.3. Viewer

The group of static **StiWebDesignerSLOptions.Viewer.** properties allows setting the viewer. The list of properties is represented below.

- The **ShowMainToolBar** property is used to show/hide the **Tool Bar**. If the **ShowMainToolBar** property is set to **true**, then the **Tool Bar** panel will be shown. If the **ShowMainToolBar** property is set to **false**, then the **Tool Bar** panel will be hidden. By default the property is set to **true**;

- The **ShowPrintButton** property is used to show/hide the **Print** button. If the **ShowPrintButton** property is set to **true**, then the **Print** button will be shown. If the **ShowPrintButton** property is set to **false**, then the **Print** button will be hidden. By default the property is set to **true**;

- The **ShowReportOpenButton** property is used to show/hide the **Open** button. If the **ShowReportOpenButton** property is set to **true**, then the **Open** button will be shown. If the

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**ShowReportOpenButton** property is set to **false**, then the **Open** button will be hidden. By default the property is set to **true**;

- The **ShowReportSaveButton** property is used to show/hide the **Save** button. If the **ShowReportSaveButton** property is set to **true**, then the **Save** button will be shown. If the **ShowReportSaveButton** property is set to **false**, then the **Save** button will be hidden. By default the property is set to **true**;

- The **ShowPageNewButton** property is used to show/hide the **Page New** button. If the **ShowPageNewButton** property is set to **true**, then the **Page New** button will be shown. If the **ShowPageNewButton** property is set to **false**, then the **Page New** button will be hidden. By default the property is set to **true**;

- The **ShowPageDeleteButton** property is used to show/hide the **Page Delete** button. If the **ShowPageDeleteButton** property is set to **true**, then the **Page Delete** button will be shown. If the **ShowPageDeleteButton** property is set to **false**, then the **Page Delete** button will be hidden. By default the property is set to **true**;

- The **ShowPageDesignButton** property is used to show/hide the **Edit** button. If the **ShowPageDesignButton** property is set to **true**, then the **Edit** button will be shown. If the **ShowPageDesignButton** property is set to **false**, then the **Edit** button will be hidden. By default the property is set to **true**;

- The **ShowPageSizeButton** property is used to show/hide the **Page Size** button. If the **ShowPageSizeButton** property is set to **true**, then the **Page Size** button will be shown. If the **ShowPageSizeButton** property is set to **false**, then the **Page Size** button will be hidden. By default the property is set to **true**;

- The **ShowBookmarksPanel** property is used to show/hide the **Bookmarks** panel. If the **ShowBookmarksButton** property is set to **true**, then the **Bookmarks** panel will be shown. If the **ShowBookmarksButton** property is set to **false**, then the **Bookmarks** panel will be hidden. By default the property is set to **true**;

- The **ShowToolFindButton** property is used to show/hide the **Find** button. If the **ShowToolFindButton** property is set to **true**, then the **Find** button will be shown. If the **ShowToolFindButton** property is set to **false**, then the **Find** button will be hidden. By default the property is set to **true**;

- The **ShowFullScreenButton** property is used to show/hide the **Full Screen** button. If the **ShowFullScreenButton** property is set to **true**, then the **Full Screen** button will be shown. If the **ShowFullScreenButton** property is set to **false**, then the **Full Screen** button will be hidden. By default the property is set to **true**;

- The **ShowZoomOnePageButton** property is used to show/hide the **One Page** button. If the **ShowZoomOnePageButton** property is set to **true**, then the **One Page** button will be shown. If the **ShowZoomOnePageButton** property is set to **false**, then the **One Page** button will be hidden. By default the property is set to **true**;

- The **ShowZoomTwoPagesButton** property is used to show/hide the **Two Pages** button. If the **ShowZoomTwoPagesButton** property is set to **true**, then the **Two Pages** button will be shown. If the **ShowZoomTwoPagesButton** property is set to **false**, then the **Two Pages** button will be

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hidden. By default the property is set to **true**;

- The **ShowZoomPageWidthButton** property is used to show/hide the **Page Width** button. If the **ShowZoomPageWidthButton** property is set to **true**, then the **Page Width** button will be shown. If the **ShowZoomPageWidthButton** property is set to **false**, then the **Page Width** button will be hidden. By default the property is set to **true**;

- The **ShowToolEditorButton** property is used to show/hide the **Tool Editor** button. If the **ShowToolEditorButton** property is set to **true**, then the **Tool Editor** button will be shown. If the **ShowToolEditorButton** property is set to **false**, then the **Tool Editor** button will be hidden. By default the property is set to **true**;

- The **ShowDocumentButton** property is used to show/hide the **Document** button. If the **ShowDocumentButton** property is set to **true**, then the **Document** button will be shown. If the **ShowDocumentButton** property is set to **false**, then the **Document** button will be hidden. By default the property is set to **true**;

- The **ShowPdfButton** property is used to show/hide the **Export to PDF** button . If the **ShowPdfButton** property is set to **true**, then the **Tool Editor** button will be shown. If the **ShowPdfButton** property is set to **false**, then the **Tool Editor** button will be hidden. By default the property is set to **true**;

## Navigation panel of the viewer

- The **ShowFirstPageButton** property is used to show/hide the **First Page** button. If the **ShowFirstPageButton** property is set to **true**, then the **First Page** button will be shown. If the **ShowFirstPageButton** property is set to **false**, then the **First Page** button will be hidden. By default the property is set to **true**;

- The **ShowPageLastButton** property is used to show/hide the **Last Page** button. If the **ShowPageLastButton** property is set to **true**, then the **Last Page** button will be shown. If the **ShowPageLastButton** property is set to **false**, then the **Last Page** button will be hidden. By default the property is set to **true**;

- The **ShowPageGoToButton** property is used to show/hide the **Go to Page** button. If the **ShowPageGoToButton** property is set to **true**, then the **Go to Page** button will be shown. If the **ShowPageGoToButton** property is set to **false**, then the **Go to Page** button will be hidden. By default the property is set to **true**;

- The **ShowPageNextButton** property is used to show/hide the **Next Page** button. If the **ShowPageNextButton** property is set to **true**, then the **Next Page** property is set to **false**, then the **ShowPageNextButton** property is set to **false**, then the **Next Page** button will be hidden. By default the property is set to **true**;

- The **ShowPreviousPageButton** property is used to show/hide the **Previous Page** button. If the **ShowPreviousPageButton** property is set to **true**, then the **Previous Page** button will be shown. If the **ShowPreviousPageButton** property is set to **false**, then the **Previous Page** button will be hidden. By default the property is set to **true**;

## Zoom in the viewer

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- The **ShowPageViewSingleModeButton** property is used to show/hide the **Single Page** button. If the **ShowPageViewSingleModeButton** property is set to **true**, then the **Single Page** button will be shown. If the **ShowPageViewSingleModeButton** property is set to **false**, then the **Single Page** button will be hidden. By default the property is set to **true**;

- The **ShowPageViewContinuousModeButton** property is used to show/hide the **Continuous** button. If the **ShowPageViewContinuousModeButton** property is set to **true**, then the **Continuous** button will be shown. If the **ShowPageViewContinuousModeButton** property is set to **false**, then the **Continuous** button will be hidden. By default the property is set to **true**;

- The **ShowPageViewMultipleModeButton** property is used to show/hide the **Multiple Pages** button. If the **ShowPageViewMultipleModeButton** property is set to **true**, then the **Multiple Pages** button will be shown. If the **ShowPageViewMultipleModeButton** property is set to **false** , then the **Multiple Pages** button will be hidden. By default the property is set to **true**;

- The **ShowSliderZoomControl** property is used to show/hide the **Zoom** slider. If the **ShowZoom** property is set to **true**, then the **Zoom** slider will be shown. If the **ShowZoom** property is set to **false**, then the **Zoom** slider will be hidden. By default the property is set to **true;**

- The **Zoom** property is used to change the report zoom in the viewer. This property can have any value from **0** to **100**, where the **Zoom** value is zoom in percent.

## 6.6. Changing Web Designer Properties from Code

The **PreInit** event is used to change properties of Web-designer. This event occurs before the initialization of the designer, i.e. before passing the properties of the Web-designer to the client application side. In other words, to change the properties of the Web-designer of the code, you must subscribe to the **PreInit** event. For example, subscribe to the event **PreInit** event and set **Localization** property to **en**. To do this, add the following code to the event:

```
protected void StiWebDesignerSL1_PreInit(object sender,
StiWebDesignerSL.StiPreInitEventArgs e)
    {
        e.WebDesignerSL.Localization = "en";

    }
```

Now when you run the Web-designer it will be localized in English.

For example: change the title of the browser. By default, the title of the browser is the value of the **ReportAlias** property. If the property is not set, then the value of the **ReportName** property is taken. In order to change the title of the browser, add the following code to the event:

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```
protected void StiWebDesignerSL1_PreInit(object sender,
StiWebDesignerSL.StiPreInitEventArgs e)
    {
         e.WebDesignerSL.BrowserTitle = "Stimulsoft";

    }
```

Now when you run Web-designer, a **Stimulsoft** word will be displayed as a title of the browser.

## 6.7. Web Reports Designer Localization

The **Web** designer can be localized in 26 languages. It is nesessary to change the value of the **Localization** property. The localization file will be applied right after loading the **Web** designer. See the code that can be used to change the localization:

```
<cc1:StiWebDesigner ID="StiWebDesigner1" runat="server" Localization="ru" />
```

## 6.8. WCF Server

When designing a report, a user may process events via the **WCF** server. For this you need to set the **UseWCFService** property to **true**:

```
Stimulsoft.Report.StiOptions.Silverlight.WCFService.UseWCFService = true
;
```

When the **UseWCFService** property is set to **true**, a user may use the following events:

```
Stimulsoft.Report.StiOptions.Silverlight.WCFService.WCFRenderReport
```

The **WCFRenderReport** event occurs when rendering a report;

```
Stimulsoft.Report.StiOptions.Silverlight.WCFService.WCFTestConnection
```

The **WCFTestConnection** event occurs when clicking the **Test Connection** button;

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```
Stimulsoft.Report.StiOptions.Silverlight.WCFService.WCFBuildObjects
```

The **WCFBuildObjects** event occurs when returning the list tables from the created data source;

```
Stimulsoft.Report.StiOptions.Silverlight.WCFService.WCFRetrieveColumns
```

The **WCFRetrieveColumns** event occurs when returning the list of data columns for the table;

```
Stimulsoft.Report.StiOptions.Silverlight.WCFService.
WCFOpeningReportInDesigner
```

The **WCFOpeningReportInDesigner** event occurs when clicking the **Open Report** button in the main menu;

```
Stimulsoft.Report.StiOptions.Engine.GlobalEvents.SavingReportInDesigner
```

The **SavingReportInDesigner** event occurs when saving a report;

```
Stimulsoft.Report.StiOptions.Silverlight.WCFService.WCFExportDocument
```

The **WCFExportDocument** event occurs when exporting a report by means of the server. In order to make available a menu with exports in the viewer by means of the server, you must set the **ShowReportSaveToServerButton** property to **true**:

```
Stimulsoft.Report.StiOptions.Viewer.Elements.
ShowReportSaveToServerButton = true;
```

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Part

# Using WinForms Viewer

# 7. Using WinForms Viewer

To view reports in the WinForms the **StiViewerControl** component is used. The component can show a report, zoom, save rendered report to different formats, print a report, send a report via e-mail.

## 7.1. How to Show Report?

It is necessary call only one method to show a report:

C#

```
StiReport report = new StiReport();
report.Load("report.mrt");
report.Show();
```

VB

```
Dim Report As StiReport = New StiReport()
Report.Load("report.mrt")
Report.Show()
```

If the report was not rendered before showing, the **Show** method will render a report using the **Render** method.

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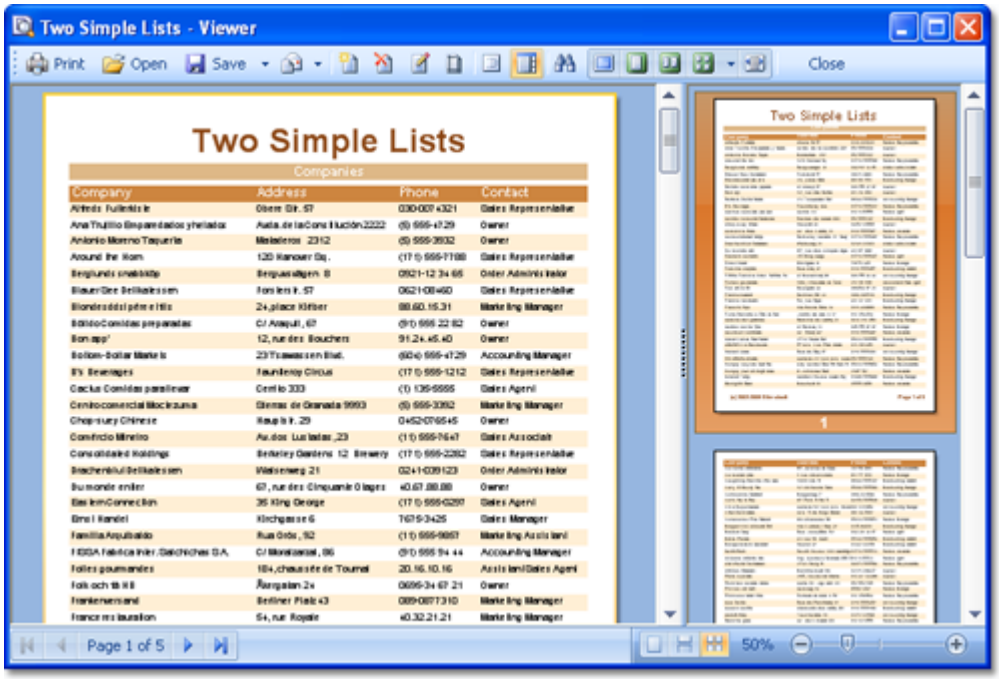
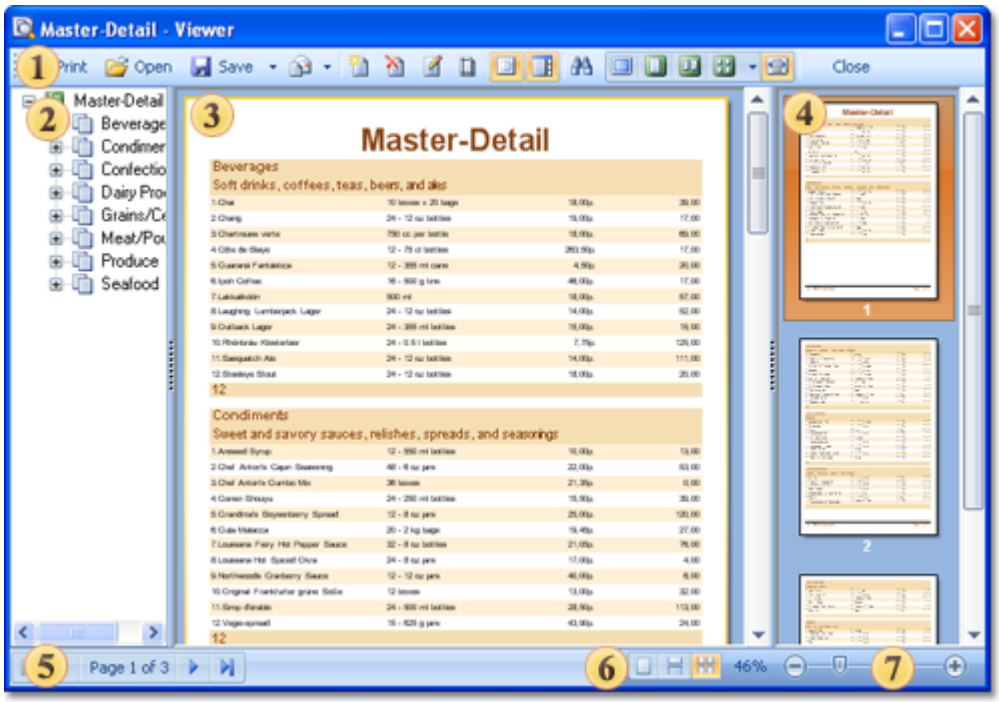



## 7.2. Report Viewer Structure

On the picture below the basic elements of the report viewer are shown.

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1 The basic commands to control the report are represented on the toolbar.
2 Tree of bookmarks of the output report. Using these bookmarks it is possible to jump by structure elements of a report.
3 The output report.
4 The report thumbnails panel. Decreased copies of a report are shown on this panel. The panel is used to quickly navigate throughout of a report.
5 The toolbar to scroll up or down in reports pages.
6 The toolbar to select the mode of report showing.
7 The toolbar to increase or decrease report zoom.

## 7.3. Basic Toolbar of Viewer

Main controls are placed on this toolbar. The picture below shows the structure of the toolbar:

1 Run report printing. After activation of this command the printing dialog with parameters of printing will be displayed.
2 Open previously saved report. Any rendered report can be saved to .mdc or .mdz format for further preview.
3 Save the rendered report to other file formats.
4 Send the render report via Email. The report will be converted to one of the file formats.
5 Add a new empty page to the rendered report.
6 Delete the current page of a report.
7 Open the reports designer and show the current page for editing.
8 Opens the window of changing basic parameters of the rendered report.
9 Show/hide the tree of bookmarks. If there are no bookmarks in the rendered report then the viewer will automatically hide the tree of bookmarks. If there are bookmarks in a report, then the viewer will automatically show the tree of bookmarks.
10 Show/hide the reports thumbnails.
11 Enable the search panel.
12 Run the full screen mode of report showing.
13 Change zoom of the report to display only one full page. More than one page by the width can be output.
14 Change zoom of the report to display two pages on the screen.
15 Change zoom of the report according to horizontal and vertical sizes of pages.

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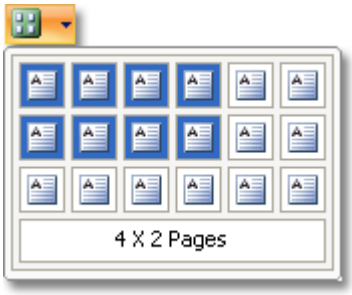
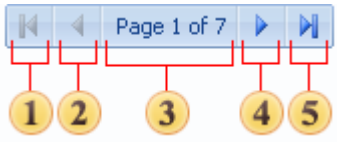


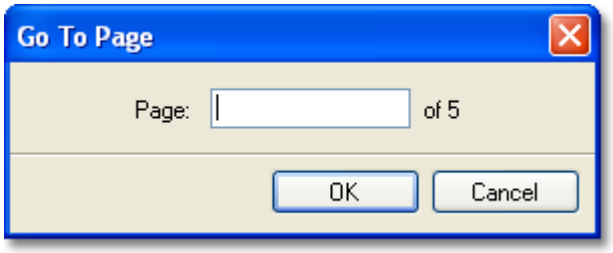

16 Change zoom of the report to fit the page width to the screen width.
17 Run matrix mode of the report showing.

## 7.4. Page Navigation

On the picture below the toolbar that is used for report navigation is shown.




1 Set the first page of a report as the current page.
2 Set the previous page of a report as the current one.
3 Show the number of the current page and the number of pages in a report. If click on it then it is possible to indicate the number of a page that should be the current.




4 Set the next page of a report as the current one.
5 Set the last page of a report as the current page.

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## 7.5. Page Viewing Modes

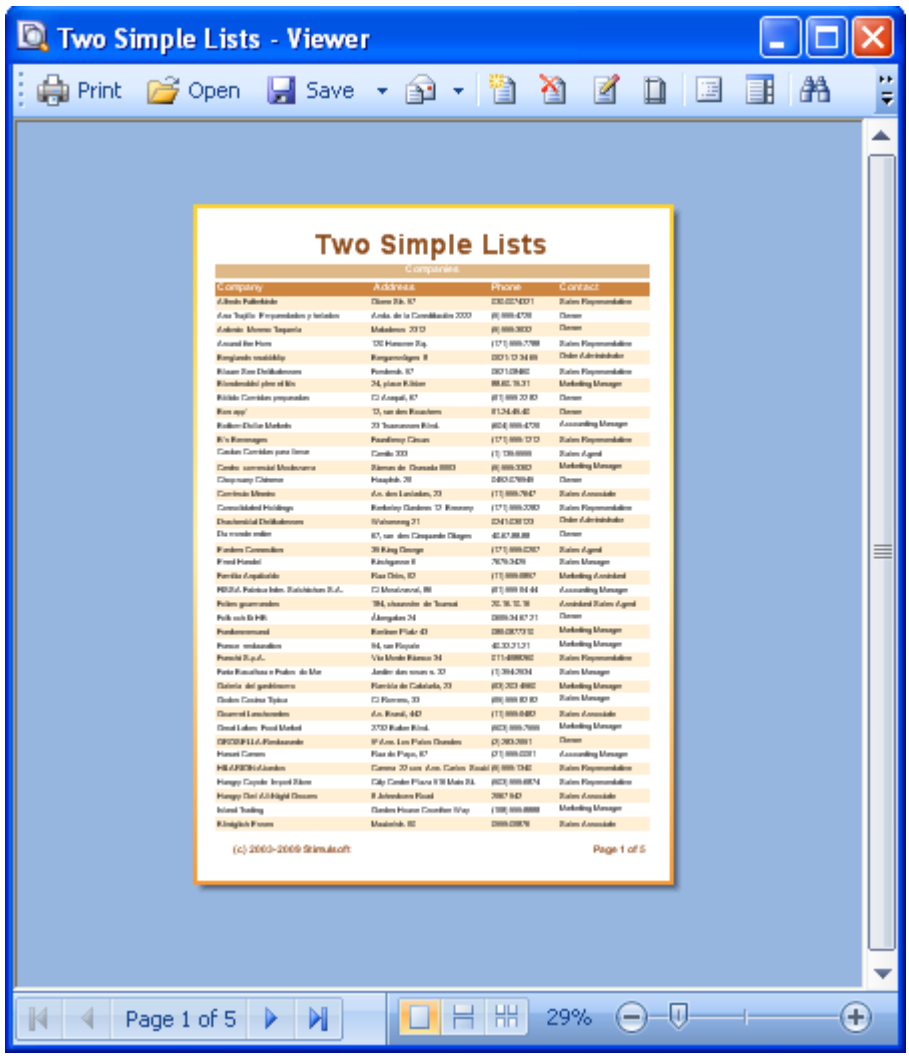
The viewer for WinForms supports three modes of viewing pages:

1. **Single Page**
2. **Continuous**
3. **Multiple Pages**

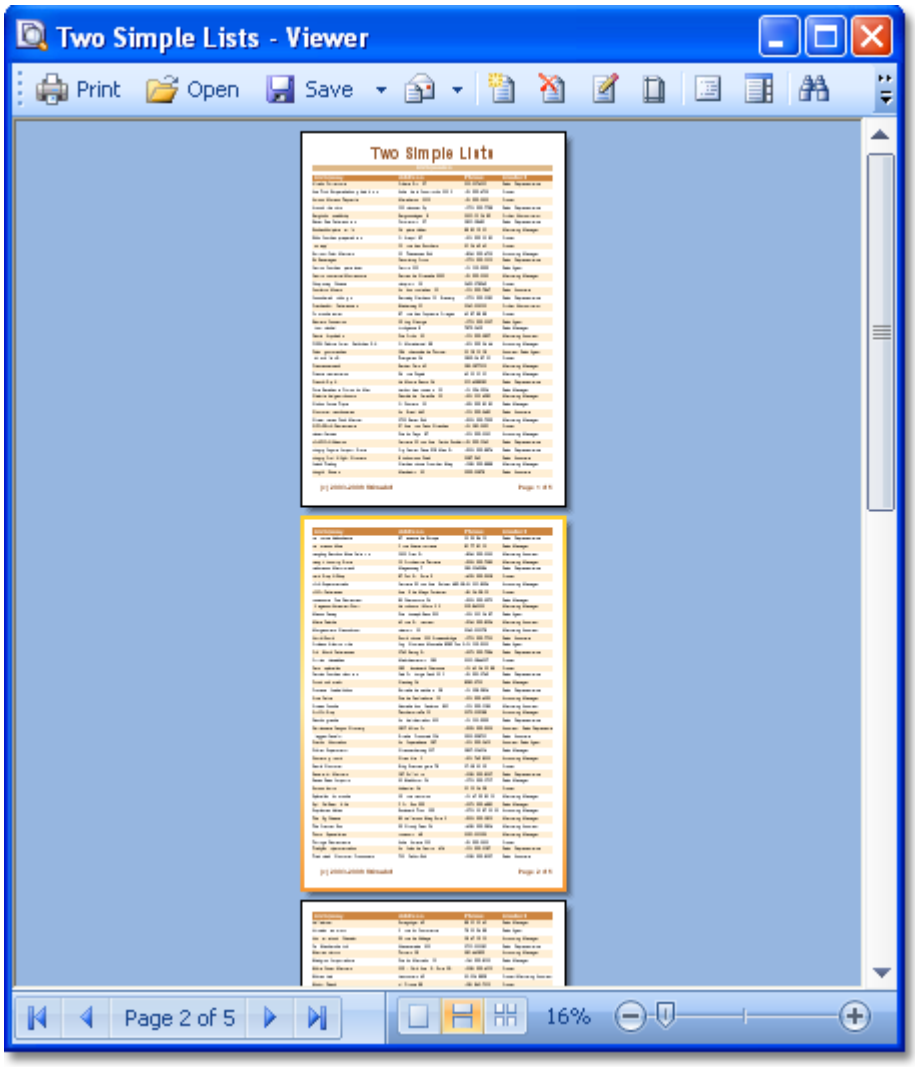
Three buttons are used to control the page view mode. They are placed at the bottom of the viewer in the right corner.

Each mode has its own advantages.

**Single page.** In this mode the current page of a report is shown in the window of the viewer. The picture below shows how this mode works.



**Continuous.** In this mode all pages are placed into one vertical line. The picture below shows how this mode works.




**Multiple Pages.** In this mode as many pages in the selected zoom as they can fill the window of the viewer are shown. The picture below shows how this mode works.

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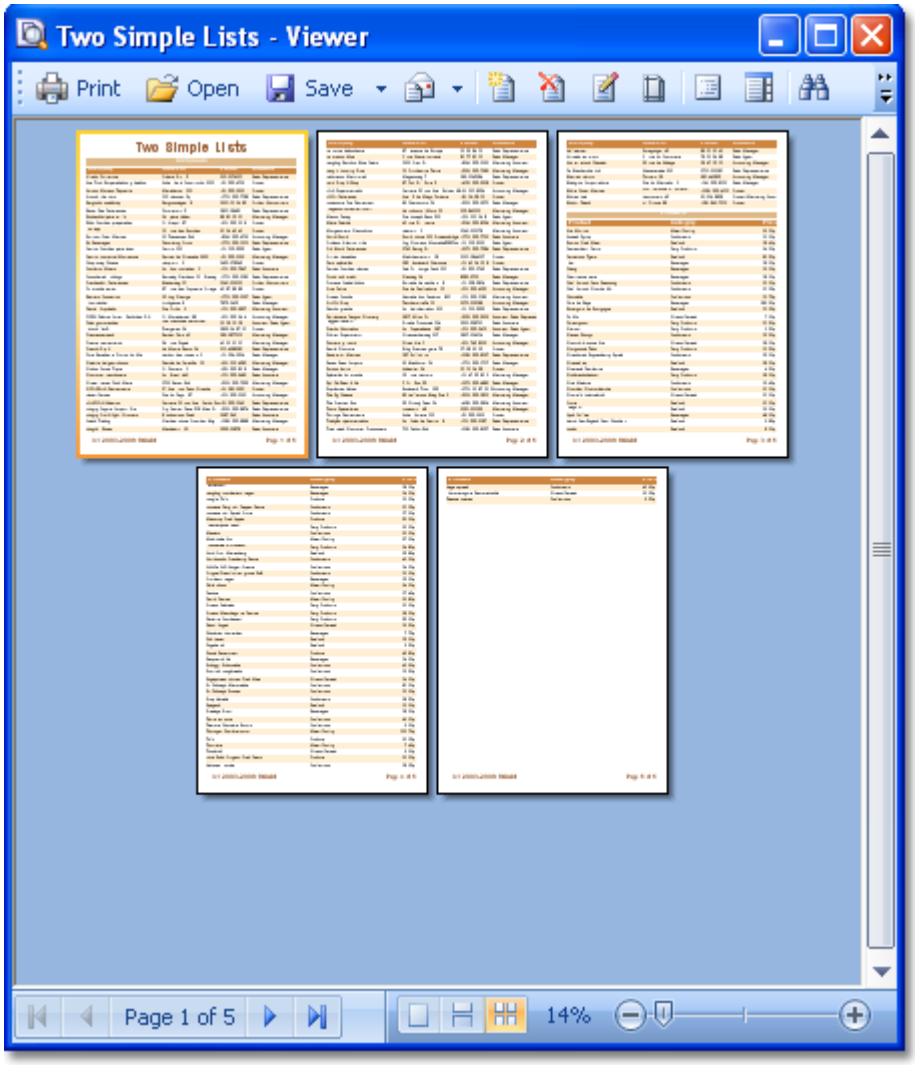


## 7.6. Search Panel

The search panel is used to search some text in the report. On the main toolbar this option can be enabled by clicking the binocular icon. All controls for search are placed on a single panel.

1. Close the search panel.
2. The text that should be found.
3. The button to run search.
4. If the flag is set, then search will be repeated considering the case.

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5 If the flag is set, then search will be done considering the whole word.

## 7.7. Keyboard Shortcuts for WinForms Viewer

The list of hot keys of the report viewer is shown below.

| | |
|---|---|
| **Ctrl+P** | Print a report |
| **Ctrl+O** | Close a report |
| **Ctrl+Shift+N** | Add a new page to the report |
| **Ctrl+Shift+D** | Delete the current page of a report |
| **Ctrl+Shift+E** | Edit the current page of a report in the reports designer |
| **Ctrl+Shift+S** | Change report parameters |
| **Ctrl+B** | Enable/disable tree of bookmarks |
| **Ctrl+T** | Enable/disable thumbnails |
| **Ctrl+F** | Search |
| **Ctrl+E** | Edit components which support editing |
| **F2** | Run the full screen mode of view a report |
| **F3** | Set zoom of a report view - one page |
| **F4** | Set zoom of a report view - two pages |
| **F5** | Set zoom of a report view - by page width |
| **Ctrl+G** | Jump to page |
| **Shift+F2** | Enable the page view mode - one page |
| **Shift+F3** | Enable the page view mode - continues |
| **Shift+F4** | Enable the page view mode - some pages |

## 7.8. Dot-Matrix Viewer for WinForms

The **Dot-matrix** viewer is designed to preview the report before printing it on dot matrix printer. The Dot matrix printer is used to print only the text and characters of pseudographics. Accordingly the viewer displays only the text and borders of objects as pseudographics characters. The picture below shows the Dot-matrix viewer dialog box:

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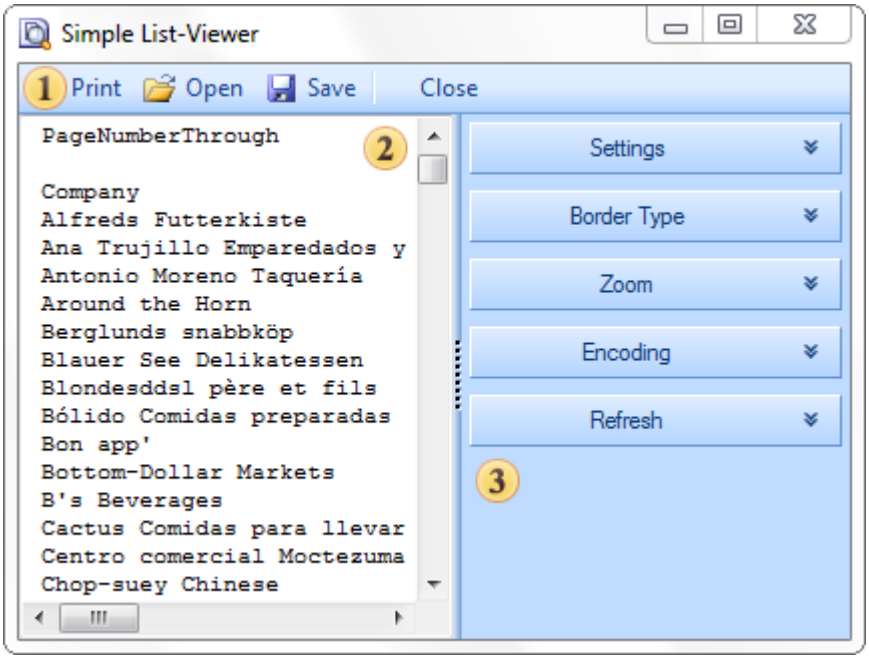
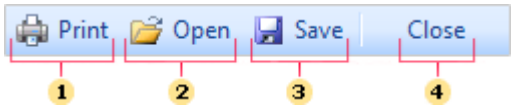



1 The **Dot-matrix viewer toolbar**.
2 The panel displays the text of a report
3 The options bar of a report.

## 7.8.1. Toolbar

The picture below shows the toolbar of the **Dot-matrix** viewer:




1 Prints the report. After activation of this command the Print dialog will be displayed, where you will be asked to select printing options.
2 Opens a previously saved text file.
3 Saves the rendered report to a text file.
4 Closes the **Dot-matrix** viewer dialog box.

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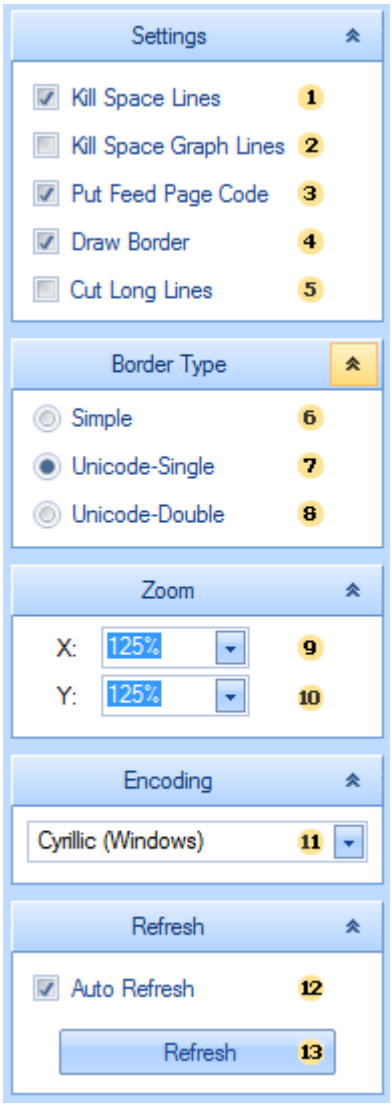
## 7.8.2. Options Bar

The **Options** bar is grouped and each group is located on a separate tab. The picture below shows the options bar:




1 The **Kill Space Lines** option removes empty rows in the text.
2 The **Kill Space Graph Lines** option deletes the rows that contain only the "vertical line" pseudographics characters.
3 The **Put Feed Page Code** option inserts the FormFeed symbol on the bottom of each page.
4 The **Draw Border** option draws the borders of the objects of the selected type.
5 The **Cut Long Lines** option cuts long lines of the text that is out of bounds of the text component.

6 - 8 options are the parameters of the border and define its type:
6 **Simple** border is drawn with + - | symbols and will be saved and printed in any encoding;
7 **Unicode-Single** single lines of pseudographics are used;

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8 **Unicode-Double** double lines of pseudographics are used;
Pseudographics characters are not present in each encoding.

9 - 10 options. When exporting to text all the coordinates and sizes of objects are recalculated. Zoom **X** and Zoom **Y** coefficients control this conversion.
By default, Zoom **X** = 100%, Zoom **Y** = 100%. With these values of the parameter, the A4 page is converted to text with sizes of 80 characters by width and 62 rows by height.
This corresponds to using the **Pica** font of the printer (80 characters per line) and the line spacing **1,0**. The following values are frequently used:
- Zoom **X** = 100% corresponds to using the **Pica** font of the printer (80 characters per line);
- Zoom X = 120% corresponds to using the **Elite** font of the printer (96 characters per line);
- Zoom X = 170% corresponds to using the condensed font of the printer (136 characters per line);
- Zoom Y = 100% corresponds to the using the line spacing 1,0.

9 **Zoom X: -** by the width of the page.
10 **Zoom Y: -** by the height of the page.
11 **Encoding** - encoding of the text.
12 **Auto Refresh** automatically updates the rendered report if there are any changes in the parameters.
13 The **Refresh** button is used to manually update the report.

## 7.8.3. Setting Dot-Matrix Viewer in WinForms

The **Dot-Matrix** viewer can be configured from code using static properties. Depending on the value of the static properties in the Dot-matrix viewer, these or that parameters will be specified. For example, the **AutoRefresh** property. The picture below shows the **Dot-matrix** viewer dialog box:

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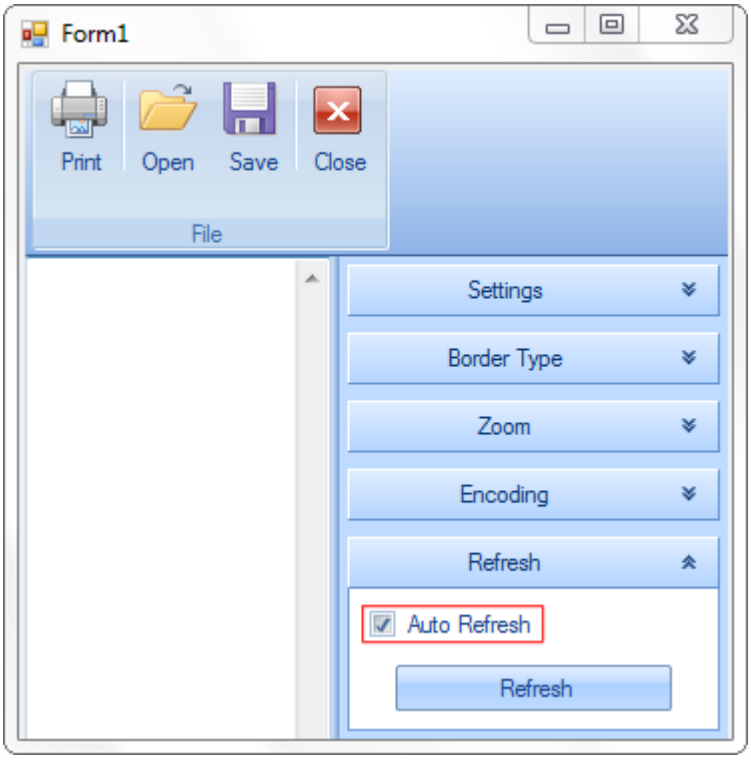


As can be seen on the picture above, the **Auto Refresh** property is enabled. This means that the **AutoRefresh** static property of the **Dot-matrix** viewer is set to **true**. If the **AutoRefresh** static property is set to **false**, then the **AutoRefresh** property in the **Dot-matrix** viewer is disabled. Add the following code into the project code:

```
StiOptions.Viewer.DotMatrix.AutoRefresh = false;
```

Thus, the **AutoRefresh** property will be disabled. The picture below shows the **Dot-matrix** viewer dialog box with disabled auto refresh function:

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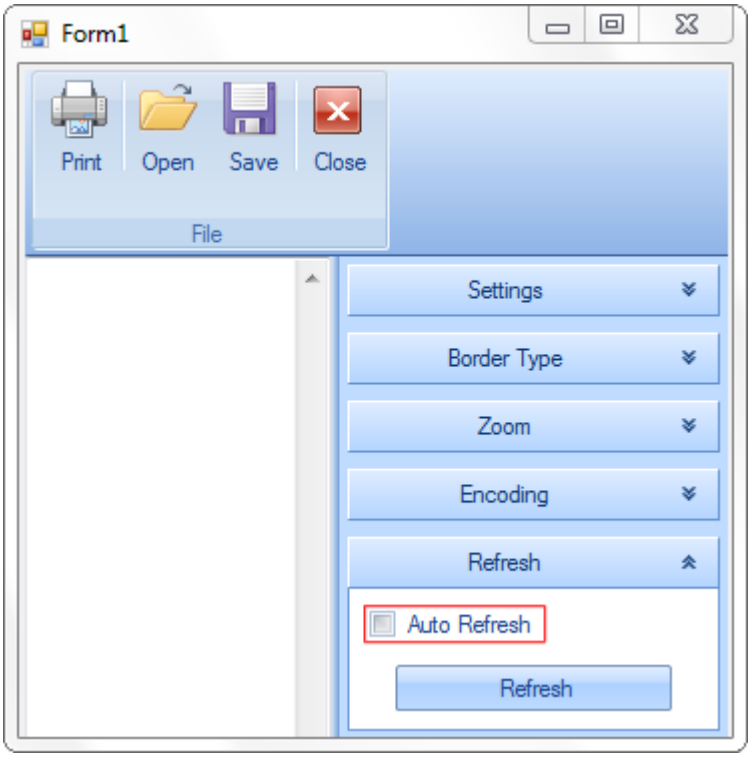


Most parameters can be set using the static properties.

## 7.8.4. DotMatrix and Escape Codes

In version 2010.2 good support of Escape-codes appeared.
For inserting the escape sequence to text the commands that may look like <#command> should be used as seen in the code sample below:

```
Normal text <#b> Bold text <#/b><#i> Italic text <#/i> Again normal text
```

Also commands of selecting bold, italic or underlined text are automatically inserted depending on the style of the text box font.
When printing to matrix printer and exporting to text format these commands are changed on appropriate escape sequences.
The StiEscapeCodesCollection is used for this process. It is inherited from the Hashtable class. This is a collection of "key-value" pairs where the key is the command and value is the escape-sequence. For different types of printers different collections with different set of command can be defined. Collections are stored in the StiOptions.Export.Txt.EscapeCodesCollectionList static variable. By default, the following collections will be created: "None", "EpsonFX", "Oki ML92/93". The "None" collection is empty and used to output the text without escape codes.

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| Command/Collection | EpsonFX | Oki ML92/93 |
|---|---|---|
| b | ESC E | ESC T |
| /b | ESC F | ESC I |
| i | ESC 4 | |
| /i | ESC 5 | |
| u | ESC -1 | ESC H |
| /u | ESC -0 | ESC D |
| sup | ESC S0 | ESC J |
| /sup | ESC T | ESC K |
| sub | ESC S1 | ESC L |
| /sub | ESC T | ESC M |
| condensed | 0x0F | 0x1d |
| /condensed | 0x12 | 0x1e |
| elite | ESC M | 0x1c |
| pica | ESC P | 0x1e |
| doublewidth | ESC W1 | 0x1f |
| /doublewidth | ESC W0 | 0x1e |

It is possible to add new collections of change the existing ones. The selection of the required collection is done by the name. If the collection with the name is not found then the "None" collection is used. The collection name can be selected from the DotMatrixViewer settings and passed as an option to the exporting and printing methods.

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# Using WPF Viewer

# 8. Using WPF Viewer

To view reports in the WPF the StiWpfViewerControl component is used. The component can show a report, zoom, save rendered report to different formats, print a report, send a report via e-mail.

## 8.1. How to Show Report?

It is necessary call only one method to show a report:

C#

```
StiReport report = new StiReport();
report.Load("report.mrt");
report.ShowWithWpf();
```

VB

```
Dim Report As StiReport = New StiReport()
Report.Load("report.mrt")
Report.ShowWithWpf()
```

If the report was not rendered before showing, the **ShowWithWpf** method will render a report using the **RenderWithWpf** method.

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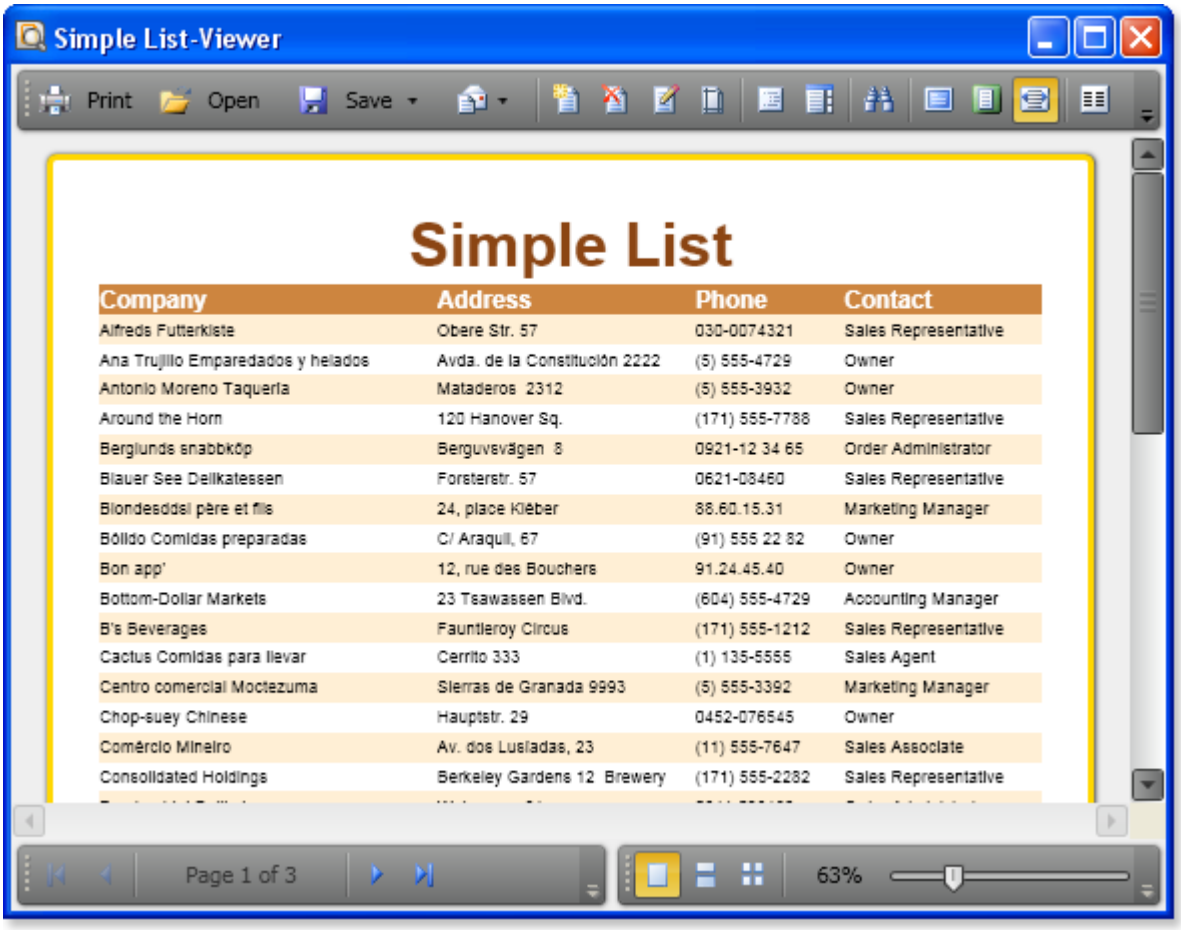


## 8.2. Report Viewer Structure

On the picture below the basic elements of the report viewer are shown.

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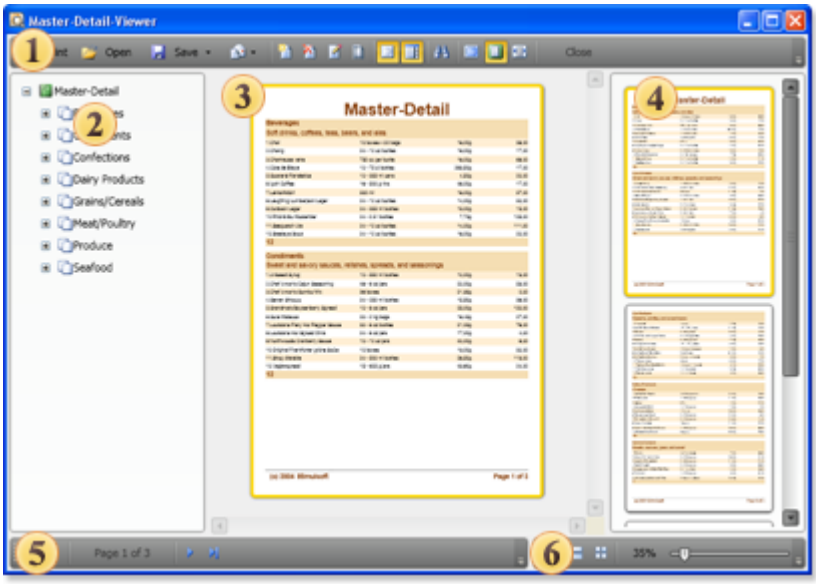
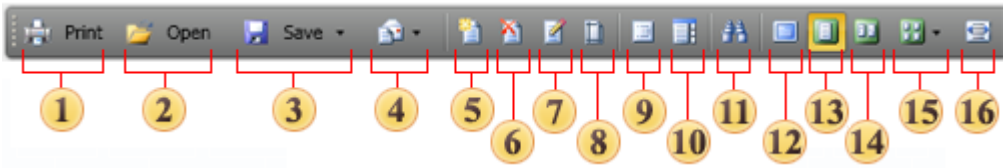



1 The basic commands to control the report are represented on the toolbar.
2 Tree of bookmarks of the output report. Using these bookmarks it is possible to jump by structure elements of a report.
3 The output report.
4 The report thumbnails panel. Decreased copies of a report are shown on this panel. The panel is used to quickly navigate throughout of a report.
5 The toolbar to scroll up or down in reports pages.
6 The toolbar to select the mode of report showing.
7 The toolbar to increase or decrease report zoom.

## 8.3. Basic Toolbar of Viewer

Main controls are placed on this toolbar. The picture below shows the structure of the toolbar:




1 Run report printing. After activation of this command the printing dialog with parameters of printing will be displayed.
2 Open previously saved report. Any rendered report can be saved to .mdc or .mdz format for further preview.
3 Save the rendered report to other file formats.
4 Send the render report via Email. The report will be converted to one of the file formats.
5 Add a new empty page to the rendered report.
6 Delete the current page of a report.
7 Open the reports designer and show the current page for editing.
8 Opens the window of changing basic parameters of the rendered report.

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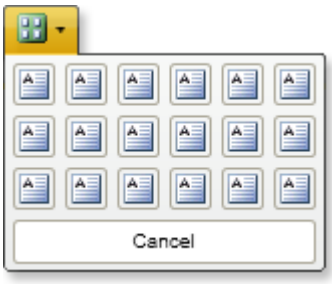
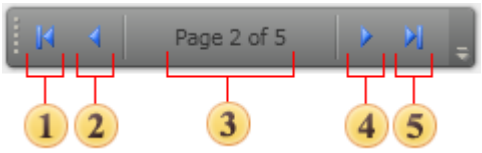
9 Show/hide the tree of bookmarks. If there are no bookmarks in the rendered report then the viewer will automatically hide the tree of bookmarks. If there are bookmarks in a report, then the viewer will automatically show the tree of bookmarks.
10 Show/hide the reports thumbnails.
11 Enable the search panel.
12 Run the full screen mode of report showing.
13 Change zoom of the report to display only one full page. More than one page by the width can be output.
14 Change zoom of the report to display two pages on the screen.
15 Change zoom of the report according to horizontal and vertical sizes of pages.




16 Change zoom of the report to fit the page width to the screen width.

## 8.4. Page Navigation

On the picture below the toolbar that is used for report navigation is shown.




1 Set the first page of a report as the current page.
2 Set the previous page of a report as the current one.
3 Show the number of the current page and the number of pages in a report. If click on it then it is possible to indicate the number of a page that should be the current.

4 Set the next page of a report as the current one.

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5 Set the last page of a report as the current page.

## 8.5. Page Viewing Modes

The viewer for WPF supports three modes of viewing pages:
1. **Single Page**
2. **Continuous**
3. **Multiple Pages**

Three buttons are used to control the page view mode. They are placed at the bottom of the viewer in the right corner.

Each mode has its own advantages.
**Single page.** In this mode the current page of a report is shown in the window of the viewer. The picture below shows how this mode works.

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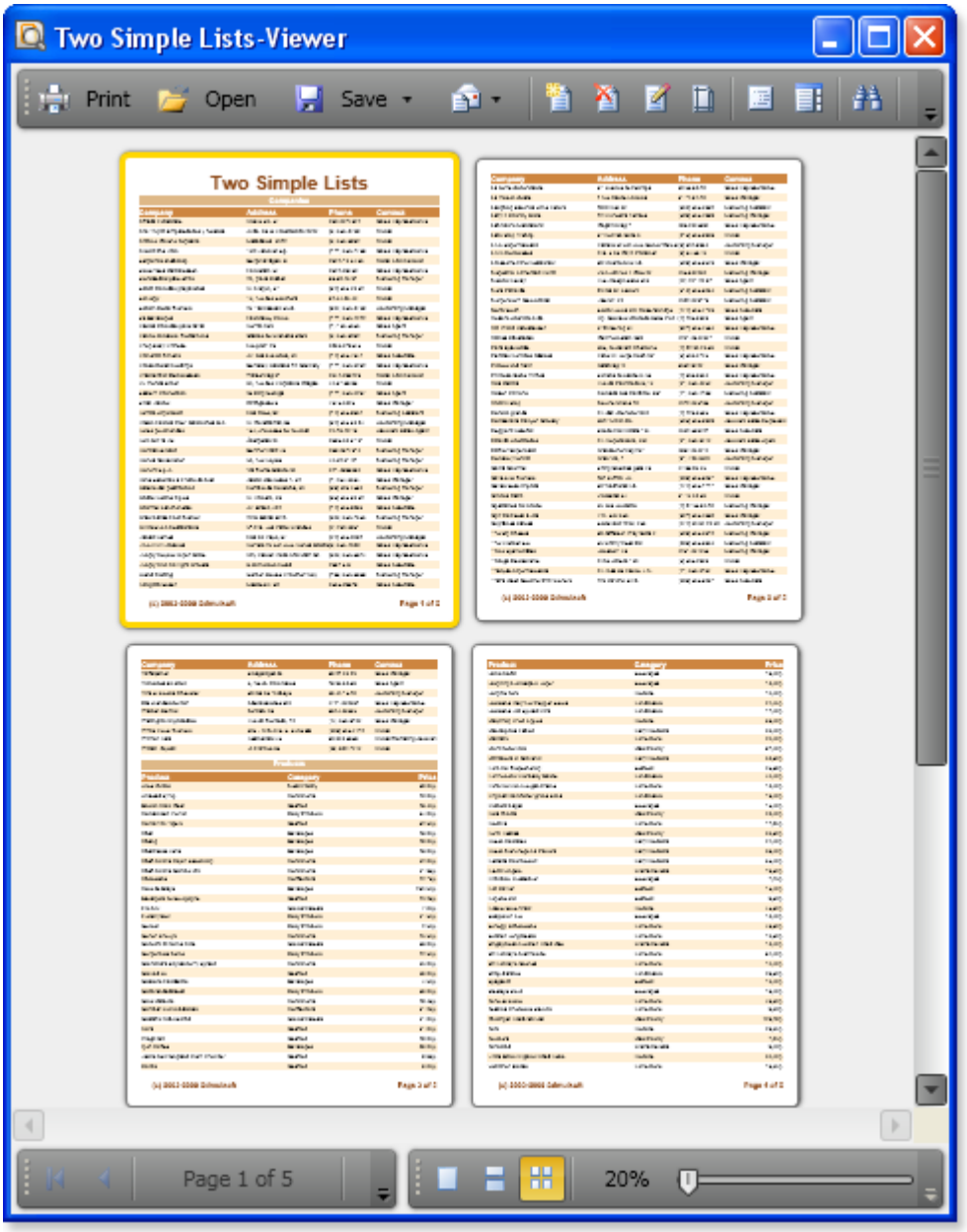
**Continuous.** In this mode all pages are placed into one vertical line. The picture below shows how this mode works.

**Multiple Pages.** In this mode as many pages in the selected zoom as they can fill the window of the viewer are shown. The picture below shows how this mode works.




## 8.6. Search Panel

The search panel is used to search some text in the report. On the main toolbar this option can be enabled by clicking the binocular icon. All controls for search are placed on a single panel.

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1. Close the search panel.
2. The text that should be found.
3. The button to run search.
4. If the flag is set, then search will be repeated considering the case.
5. If the flag is set, then search will be done considering the whole word.

## 8.7. Keyboard Shortcuts for WPF Viewer

The list of hot keys of the report viewer is shown below.

| | |
|---|---|
| **Ctrl+P** | Print a report |
| **Ctrl+O** | Close a report |
| **Ctrl+Shift+N** | Add a new page to the report |
| **Ctrl+Shift+D** | Delete the current page of a report |
| **Ctrl+Shift+E** | Edit the current page of a report in the reports designer |
| **Ctrl+Shift+S** | Change report parameters |
| **Ctrl+B** | Enable/disable tree of bookmarks |
| **Ctrl+T** | Enable/disable thumbnails |
| **Ctrl+F** | Search |
| **Ctrl+E** | Edit components which support editing |
| **F2** | Run the full screen mode of view a report |
| **F3** | Set zoom of a report view - one page |
| **F4** | Set zoom of a report view - two pages |
| **F5** | Set zoom of a report view - by page width |
| **Ctrl+G** | Jump to page |
| **Shift+F2** | Enable the page view mode - one page |
| **Shift+F3** | Enable the page view mode - continues |
| **Shift+F4** | Enable the page view mode - some pages |

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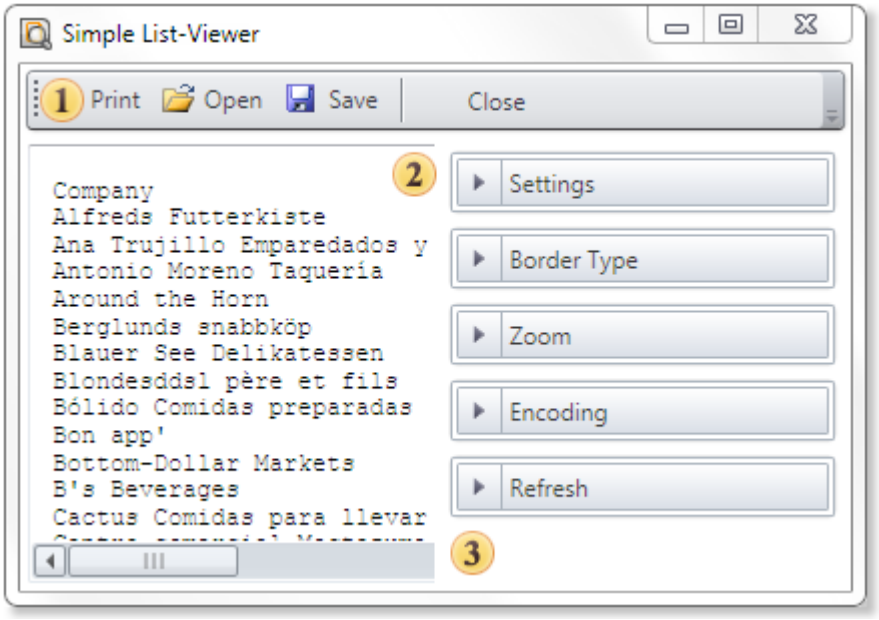
## 8.8. Dot-Matrix Viewer for WPF

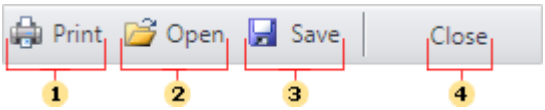
The **Dot-matrix** viewer is designed to preview the report before printing it on dot matrix printer. The Dot matrix printer is used to print only the text and characters of pseudographics. Accordingly the viewer displays only the text and borders of objects as pseudographics characters. The picture below shows the Dot-matrix viewer dialog box:




1 The **Dot-matrix viewer toolbar**.
2 The panel displays the text of a report
3 The options bar of a report.

### 8.8.1. Toolbar

The picture below shows the toolbar of the **Dot-matrix** viewer:




1 Prints the report. After activation of this command the Print dialog will be displayed, where you will be asked to select printing options.
2 Opens a previously saved text file.
3 Saves the rendered report to a text file.
4 Closes the **Dot-matrix** viewer dialog box.

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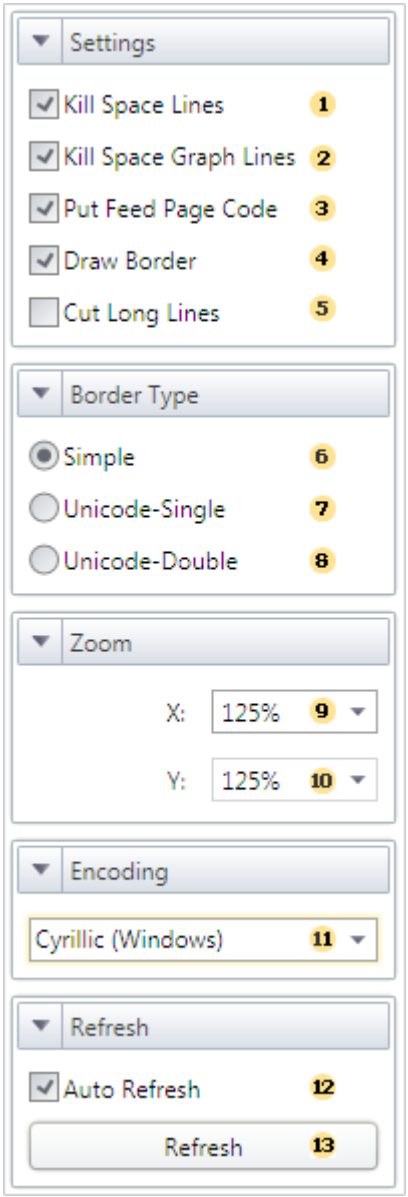
## 8.8.2. Options Bar

The **Options** bar is grouped and each group is located on a separate tab. The picture below shows the options bar:




1 The **Kill Space Lines** option removes empty rows in the text.
2 The **Kill Space Graph Lines** option deletes the rows that contain only the "vertical line" pseudographics characters.
3 The **Put Feed Page Code** option inserts the FormFeed symbol on the bottom of each page.
4 The **Draw Border** option draws the borders of the objects of the selected type.
5 The **Cut Long Lines** option cuts long lines of the text that is out of bounds of the text

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component.

6 - 8 options are the parameters of the border and define its type:
6 **Simple** border is drawn with + - | symbols and will be saved and printed in any encoding;
7 **Unicode-Single** single lines of pseudographics are used;
8 **Unicode-Double** double lines of pseudographics are used;
Pseudographics characters are not present in each encoding.

9 - 10 options. When exporting to text all the coordinates and sizes of objects are recalculated. Zoom **X** and Zoom **Y** coefficients control this conversion.
By default, Zoom **X** = 100%, Zoom **Y** = 100%. With these values of the parameter, the A4 page is converted to text with sizes of 80 characters by width and 62 rows by height.
This corresponds to using the **Pica** font of the printer (80 characters per line) and the line spacing **1,0**. The following values are frequently used:
- Zoom **X** = 100% corresponds to using the **Pica** font of the printer (80 characters per line);
- Zoom X = 120% corresponds to using the **Elite** font of the printer (96 characters per line);
- Zoom X = 170% corresponds to using the condensed font of the printer (136 characters per line);
- Zoom Y = 100% corresponds to the using the line spacing 1,0.

9 **Zoom X: -** by the width of the page.
10 **Zoom Y: -** by the height of the page.
11 **Encoding** - encoding of the text.
12 **Auto Refresh** automatically updates the rendered report if there are any changes in the parameters.
13 The **Refresh** button is used to manually update the report.

## 8.8.3. Setting Dot-Matrix Viewer for WPF

The **Dot-Matrix** viewer can be configured from code using static properties. Depending on the value of the static properties in the Dot-matrix viewer, these or that parameters will be specified. For example, the **AutoRefresh** property. The picture below shows the **Dot-matrix** viewer dialog box:

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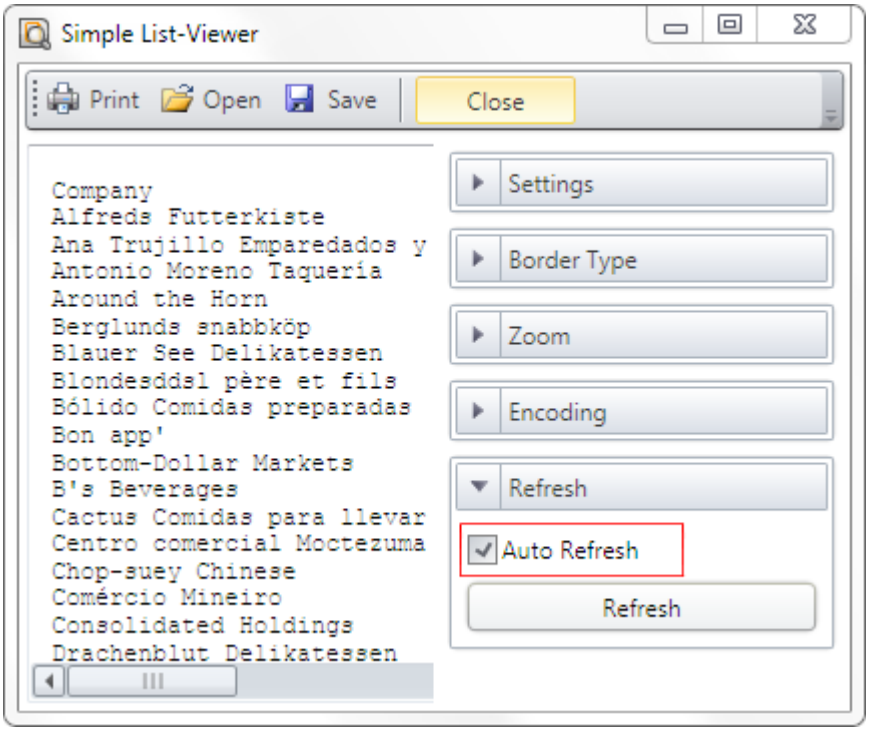


As can be seen on the picture above, the **AutoRefresh** property is enabled. This means that the **AutoRefresh** static property of the **Dot-matrix** viewer is set to **true**. If the **AutoRefresh** static property is set to **false**, then the **AutoRefresh** property in the **Dot-matrix** viewer is disabled. Add the following code into the project code:

```
StiOptions.Viewer.DotMatrix.AutoRefresh = false;
```

Thus, the **AutoRefresh** property will be disabled. The picture below shows the **Dot-matrix** viewer dialog box with disabled auto refresh function:

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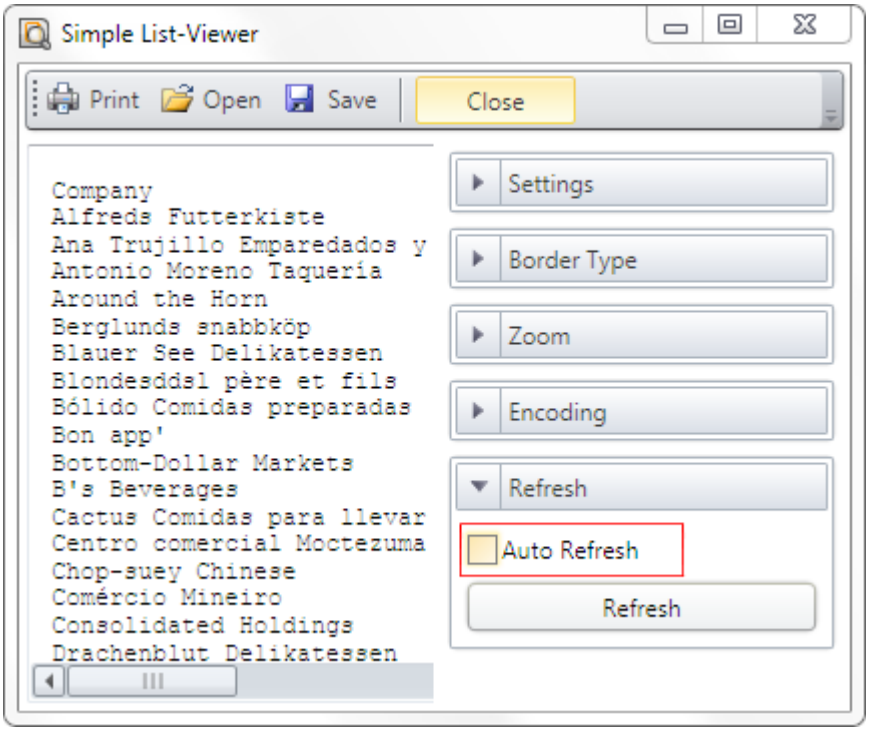


Most parameters can be set using the static properties.

## 8.8.4. DotMatrix and Escape Codes

In version 2010.2 good support of Escape-codes appeared.
For inserting the escape sequence to text the commands that may look like <#command> should be used as seen in the code sample below:

```
Normal text <#b> Bold text <#/b><#i> Italic text <#/i> Again normal text
```

Also commands of selecting bold, italic or underlined text are automatically inserted depending on the style of the text box font.
When printing to matrix printer and exporting to text format these commands are changed on appropriate escape sequences.
The StiEscapeCodesCollection is used for this process. It is inherited from the Hashtable class. This is a collection of "key-value" pairs where the key is the command and value is the escape-sequence. For different types of printers different collections with different set of command can be defined. Collections are stored in the StiOptions.Export.Txt.EscapeCodesCollectionList static variable. By default, the following collections will be created: "None", "EpsonFX", "Oki ML92/93". The "None" collection is empty and used to output the text without escape codes.

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| Command/Collection | EpsonFX | Oki ML92/93 |
|---|---|---|
| b | ESC E | ESC T |
| /b | ESC F | ESC I |
| i | ESC 4 | |
| /i | ESC 5 | |
| u | ESC -1 | ESC H |
| /u | ESC -0 | ESC D |
| sup | ESC S0 | ESC J |
| /sup | ESC T | ESC K |
| sub | ESC S1 | ESC L |
| /sub | ESC T | ESC M |
| condensed | 0x0F | 0x1d |
| /condensed | 0x12 | 0x1e |
| elite | ESC M | 0x1c |
| pica | ESC P | 0x1e |
| doublewidth | ESC W1 | 0x1f |
| /doublewidth | ESC W0 | 0x1e |

It is possible to add new collections of change the existing ones. The selection of the required collection is done by the name. If the collection with the name is not found then the "None" collection is used. The collection name can be selected from the DotMatrixViewer settings and passed as an option to the exporting and printing methods.

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# Part IX

# Using Web Viewer

# 9. Using Web Viewer

Stimulsoft Reports contains full set of tools to create reports and show them is web. Basic tools: StiWebViewer and the StiReportResponse class. The StiWebViewer is used to show a report on a page of browser. The StiReportResponse contains a method to render a report to the specified format.

## 9.1. StiWebViewer - Component of Viewing Reports

The StiWebViewer visual component consist of two elements. The first element is the toolbar that is placed on the top part of the StiWebViewer. Using the toolbar it is possible control report viewing, print a report, save a report. The second element is a area where a report is shown. The area s placed on the bottom of the StiWebViewer.

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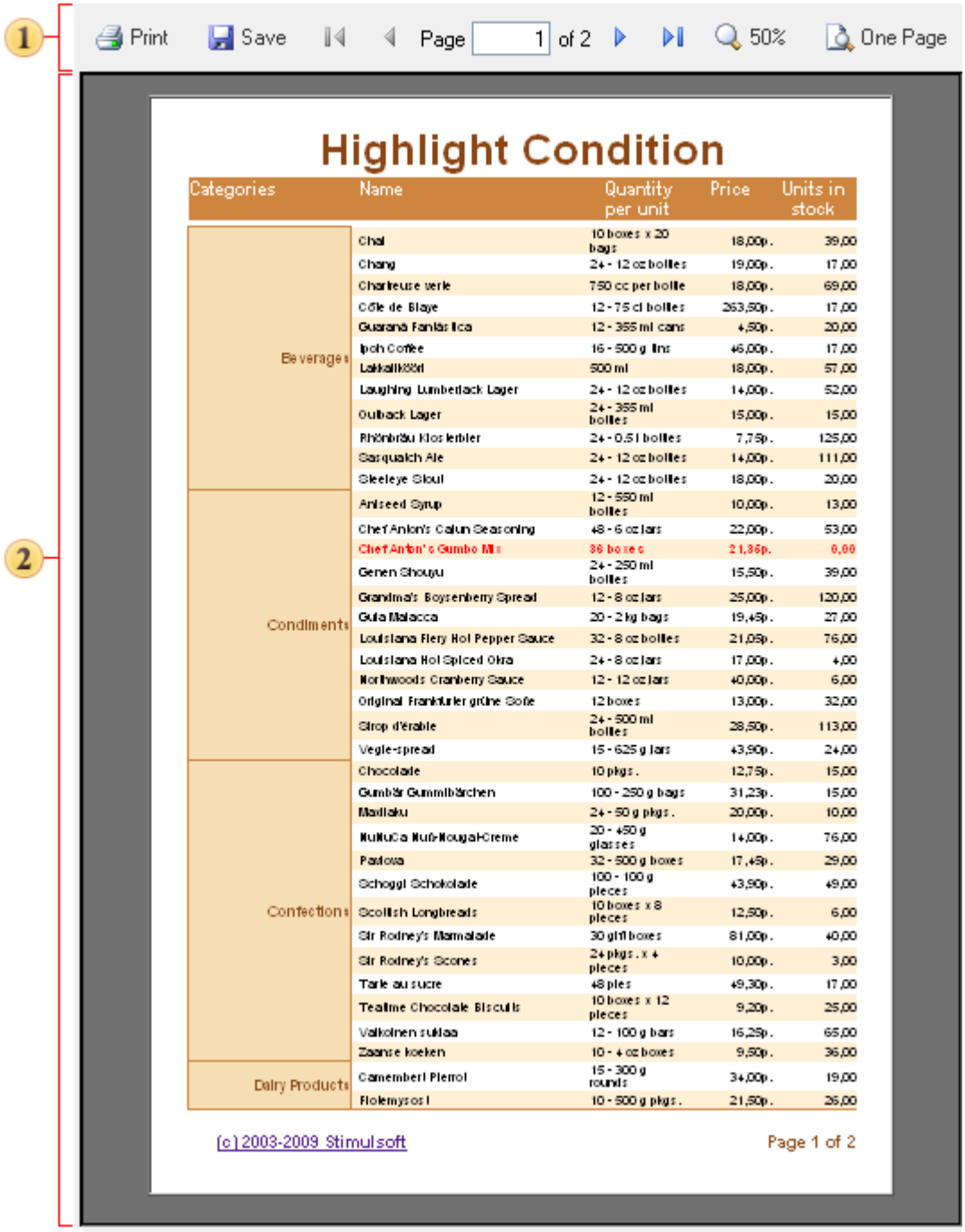
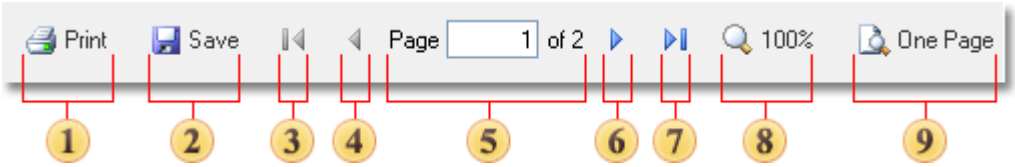



1. The toolbar is used to control a report.
2. The area of showing a report.

## 9.1.1. WebViewer Toolbar

On the picture below the controls on the panel are marked.

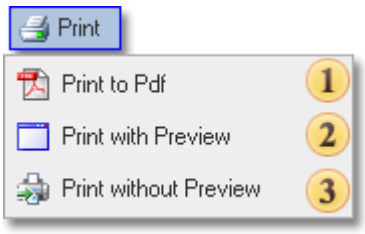



1. Print a report.
2. Save a report to the specified file format.
3. Show the first page in a report.
4. Show the pervious page in a report.
5. Show the number of the current page.
6. Show the next page of report.
7. Show the last page of a report.
8. Select the zoom of a report to be displayed.
9. The mode of report showing.

Next topics describe some command more detailed.

## 9.1.2. Printing Reports

StiWebViewer supports three modes of printing: print a report using the Adobe PDF export, print with preview and print without preview.




1. **Print a report using the Adobe PDF export.**

A report is exported to the Adobe PDF format. Then the file is sent as a report to the client browser. The client browser automatically opens the file and runs Adobe Acrobat to show the report (if it is installed).

2. **Print with preview.**

In this mode the report generator forms a report as an HTML page. This page is shown in the client browser. Using it the printing can be done.

3. **Print without preview.**

In this mode the report generator forms invisible frame on a page of StiWebViewer in what a report as an HTML page is placed. Then, using the CSS, the client browser runs printing of the HTML page.

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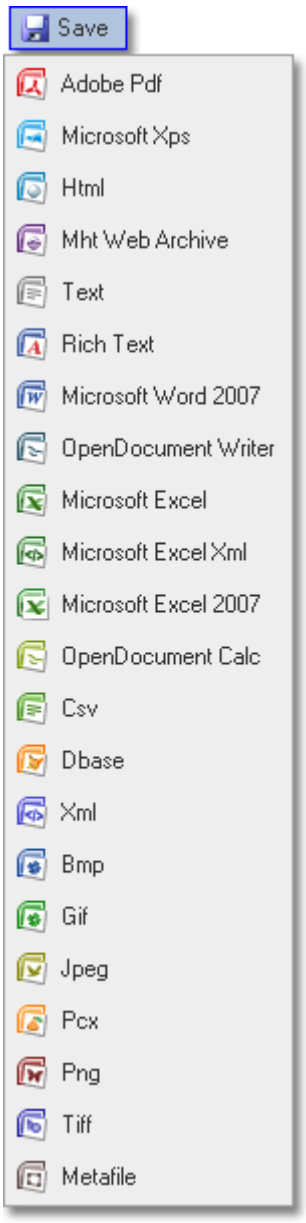
### 9.1.3. Saving Reports

The **Save** window is used to save a report to different formats. All formats available are shown in this window.

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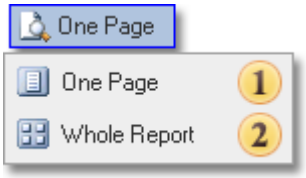
### 9.1.4. View Mode

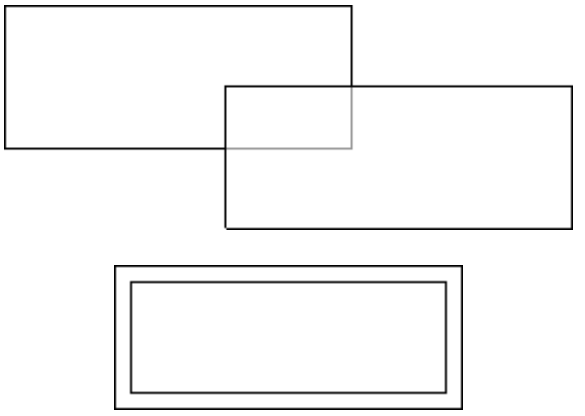
This control set the mode if showing a report.




1 Show one page.
2 Show whole report.

## 9.2. Recommendation on Placing Components on Page

How the **StiWebViewer** helps to view a report? To view a report the **StiWebViewer** exports it to the HTML format. This HTML text is output in the part of the **StiWebViewer** that is used to show reports. The HTML file is formed as one big table. The output is done in the HTML format do there are some limitations when report rendering. Stimulsoft Reports stores all objects separately but not as a table. When converting a report to the HTML format the objects edges may be intersected. Such intersections may lead to incorrect output of a report in the browser, though the report generator tries to output a report correctly with overlapping objects. Therefore, it is better do not overlap objects. Examples of components overlapping are shown on the picture below.



When report rendering, it is better use the grid. It allows placing objects by the grid and getting correct viewing a report in the browser.

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## 9.3. Using Graphic Objects in Report

Stimulsoft Reports offers full set of graphic objects. The following graphic objects are used in web:

- Images;
- Charts;
- Graphic primitives (the Shape component);
- Bar-codes;
- RTF text;
- The CheckBox component.

The Vertical Line, Horizontal Line, Rectangle components are not graphic objects.
Also it is important to consider that vector images (WMF, EMF, EMF+) are not supported by the HTML format. So they will be converted to images in pixel format.

**Notice!** All text components which text is rotated (the value of the **Angle** property is not 0) are converted to images. Besides, if the **ExportAsImage** property is set to **true** then the text components will also be converted to the image.

All components are joined with one rule - all of them will be converted as images. The HTML format does not allow passing an image in its body an the report generator uses the cache of a page or the cache of a session for saving images. When huge amount of calling to a report and multiple images in a report, there can be huge amount of objects in the page cache or in the session cache. And these objects will take additional server memory. Therefore, it is better do not use many graphic objects. Using the **ServerTimeOut** property can be used to set the time of objects caching in the page cache or in the session cache.

**Notice!** HTML supports some formats of showing images (JPEG, PNG, BMP, and GIF). It is possible to set the image type using the **ImageFormat** property of the StiWebViewer component. Every type of an image has their own advantages and disadvantages.

## 9.4. Output Images Placed on Server

If an image that should be output is static and can be saved on the server then it is recommended to use the **ImagerUrl** property of the **Image** component for showing images. When using this property the report generator does not save the image in the cache of a page or the cache of a session but puts a link on this image. So the report generator saves nothing in the cache of a page or the cache of a session and the server memory is not used for this.

## 9.5. Caching

The **StiWebViewer** component can output reports in two modes: 1. using the caching and 2. without caching. If the cashing is not used then it is necessary, when every page refreshing, to get data from a report and render a report again. When using caching, then the rendered report is saved in cache on the server. The next time when the page is refreshed, the previously rendered report is loaded from cache and its re-rendering is not required. It is important to remember that every report saved in cache takes the server memory and, if there are a lot of queries to reports, it can be a

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critical factor. Therefore, it is necessary to choose either low requirements to the memory but high requirements to speed or high requirements to the memory but low requirements to speed. Caching should not be used if the end user needs a report with actual data when every refreshing. Using the **RenderMode**, **CacheMode**, and **ServerTimeOut** properties the caching can be controlled.
If the caching of a report **is not used** then the report that was rendered using the last data when page refreshing will be printed but not the report that is shown on the current moment. If it is necessary to get the exact copy of a report form the browser, then it is necessary to use caching.

## 9.5.1. RenderMode Property

The **RenderMode** property indicates how and when a report should be rendered. All modes of the StiWebViewer component can be divided in two categories: using the caching of a rendered report, and without using caching of the rendered report.
The modes without caching
**1. Standard**
In this mode, the report should be re-rendered every time when the page is refreshed. In addition, this mode does not use Ajax to display the controls of the StiWebViewer and any report refresh with help of controls of the StiWebViewer component leads to the page refresh on what the report is output.
**2. RenderOnlyCurrentPage**
Very interesting mode of the report output. In this mode, the report is rendered only to the page that is currently displayed in the StiWebViewer component. For example, if the report consists of 100 pages (this is a big report to be output in the web), and the current page is the page number 5, the report will be rendered only up to the page number 5. The sever memory is saved in this mode.
**3. Ajax**
This mode uses Ajax to output a report and to update the content of the StiWebViewer component. For example, if a user goes to the next page of a report then not the whole page of the browser on what the StiWebViewer component is placed will be refreshed but only the next page of a report will be sent to the browser using the post-back query. This increases the convenience of working with the StiWebViewer component.
Modes with caching are UseCache and AjaxWithCache.
**1. UseCache**
With each refresh in the component StiWebViewer the reload of a page from the server occurs, but the report is not re-rendered as in the Standard mode and each time is loaded from the cache.
**2. AjaxWithCache**
This mode as well as the **Ajax** mode uses the Ajax technology to output a report and also is used for operations of refreshing the StiWebViewer component. However, unlike the **Ajax** mode, this **AjaxWithCache** mode does not re-render a report in each query of information on the server. The report that was earlier saved in cache is used.

## 9.5.2. CacheMode Property

The **CacheMode** property indicates what cache should be used to store reports, images, and service information. There are two ways:

**1. Page**

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A cache of a page will be used.
**2. Session**
A cache of a session will be used.

### 9.5.3. ServerTimeOut Property

The **ServerTimeOut** property indicates the amount of time on what it is necessary to save a report, pictures of a report, or other data in the cache. Do not use too much time or too little time. If the time is too large, then the used cache will be overflowed and will be automatically cleared by the server. As a result, the report (or images of a report) will not be cached, and incorrect result of the report output in the StiWebViewer component will occur. If the time is too small, then by the time of request to the cache, there some necessary data may not be found. It is recommended to set the time equal to 10 minutes. But the exact time can be found experimentally, considering the parameters of the server, users activity, etc.

## 9.6. Printing Reports

It is difficult to print a report from the browser. Stimulsoft Reports has three methods of printing:

1. Converting a report to the PDF file and passing it to the end-user for printing.
2. Printing a report with preview in the pop-up window.
3. Printing without preview.

The first method is the best way. It allows printing a report more precisely. But it is required to have installed Adobe Acrobat to print a report to the PDF format. Often this requirement is big disadvantage. When printing reports with preview the report generator creates a new pop-up window. A report in the HTML format is output in this window. The end-user may format this report and print it. In printing report without preview the report generator prints a report without preview. When choosing the method of printing characteristics of each method should be considered.

**Notice!** The StiWebViewer component cannot control page parameters (page size, page orientation, page margins) when printing using the 2 and 3 method. All parameters are controlled with the browser.

## 9.7. StiReportResponse Class

A report can be shown without using the StiWebViewer component. The special Stimulsoft.Report.Web.StiReportResponse class is used in this case. This class is a set of methods for saving a rendered report in different formats to the stream of a page. It is possible to assign a lot of input parameters which allows controlling the saving format of a report. For example, the following code can be used to save a report to the PDF format to the stream of a page:

```
StiReport report = new StiReport();
```

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```
report.Load("MyReport.mrt");
report.Render(false);
Stimulsoft.Report.Web.StiReportResponse.ResponseAsPdf(this, report);
```

In this code the report will be loaded first. Then this report will be rendered. Then the result of the report rendering will be saved to the stream of a page. The following code saves a report to the Excel 2007 format.

```
StiReport report = new StiReport();
report.Load("MyReport.mrt");
report.Render(false);
Stimulsoft.Report.Web.StiReportResponse.ResponseAsExcel2007(this, report);
```

## 9.8. Using Dialogs in Report

The StiWebViewer component can show reports with dialogs, but some conditions should be fulfilled:

1. The AjaxWithCache mode should be used or the UseCache in the **RenderMode** property**;**
2. If data are not received from the server then it is necessary to connect with other data using the **ReportConnect** event of the StiWebViewer component and also to disconnect from data using the **ReportDisconnect** event**;**
3. Besides it is impossible to run a report for rendering in the **Load** event of a page;
4. It is possible to use only one dialog form in a report.

## 9.9. Images of StiWebViewer Toolbar

By default, images for the toolbar of the StiWebViewer component are saved in cache before report viewing. Then images are output using cache. This result in additional requests to the server for extracting images from cache and sending them to the client. This problem can be solved using the **ButtonImagesPath** property of the StiWebViewer component. The first thing that should be done is to place a folder with toolbar images on the server (they can be taken from the standard delivery of the product). Then it is necessary to specify the path to this folder using the **ButtonImagesPath** property.

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## 9.10. Localization of StiWebViewer Component

To make the StiWebViewer component to "speak" another language it is necessary to copy a localization file of the standard delivery to the sever. For example, select the "de.xml" file. Then define the path to this file in the GlobalizationFile property of the component. For example, "Localization\de.xml".

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# Part X

# Using WebViewerFx

# 10. Using WebViewerFx

The StiWebViewerFx component is delivered in Stimulsoft Reports.Web. This component is used to show reports in a web browser.

## 10.1. How to Show Report?

Put the StiWebViewerFx component on a web page. Then you need to use the following code to show a report:

C#

```
StiReport report = new StiReport();
report.Load("report.mrt");
StiWebViewerFx1.Report = report;
```

VB

```
Dim Report As StiReport = New StiReport()
Report.Load("report.mrt")
StiWebViewerFx1.Report = Report
```

If the report was not rendered before showing, then the WebViewerFx component renders it automatically.

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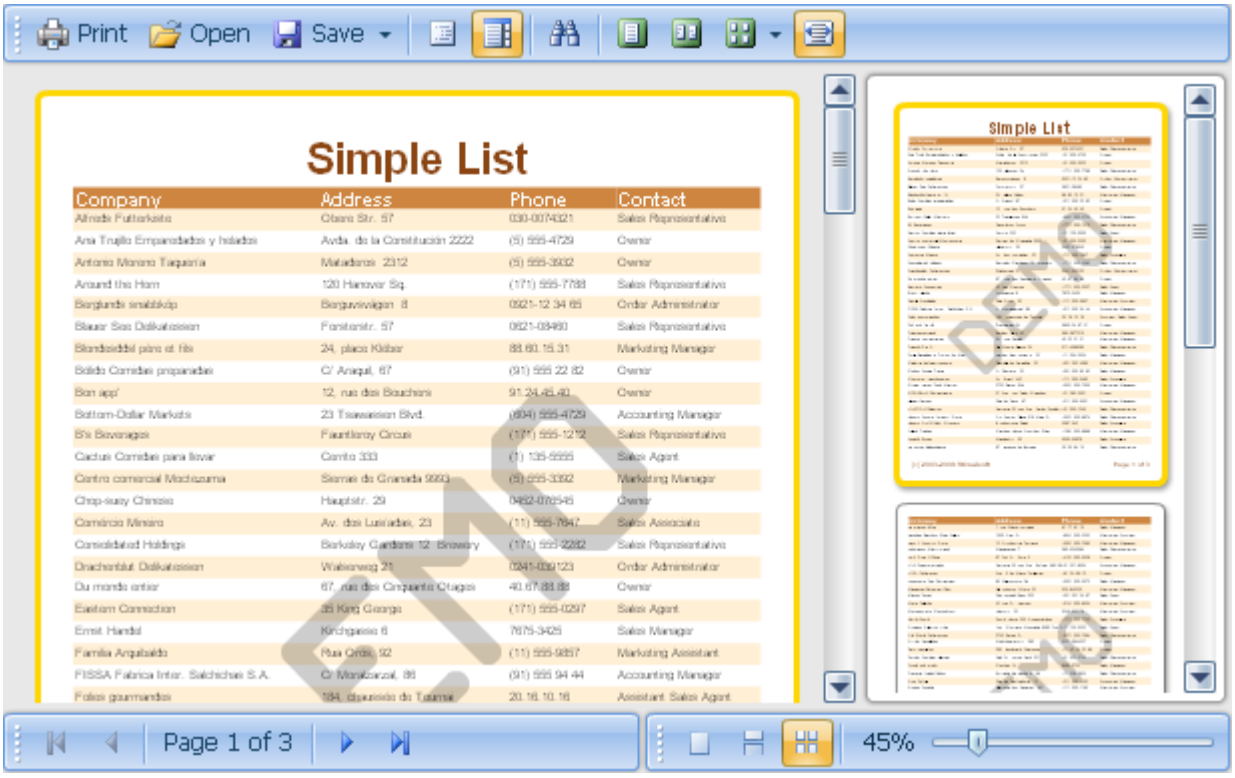


Loading a report after loading the viewer is done using the **OnGetReport** event. After subscription to this event, it will occur each time when the viewer needs a report. In other words, after loading **WebViewerFx** requests the report from the server and, if the subscription to the **OnGetReport** event is done, then, in this event, the report can be assigned to the designer. Below is a code example, using the **OnGetReport** event:

```
protected void StiWebViewerFx1_GetReport(object sender, StiWebViewerFx.
StiOnGetReportEventArgs e)
    {
        StiReport report = new StiReport();
        report.Load("D:\\SimpleList.mrt");
        e.Report = report;
    }
```

If the report has not been rendered before being displayed, the **WebViewerFx** component renders it automatically.

If it is required to show WebViewerFx на всю область окна браузера можно воспльзоваться следующим методом:

```
StiReport report = new StiReport();
report.Load("report.mrt");
StiWebViewerFx1.View(report);
```

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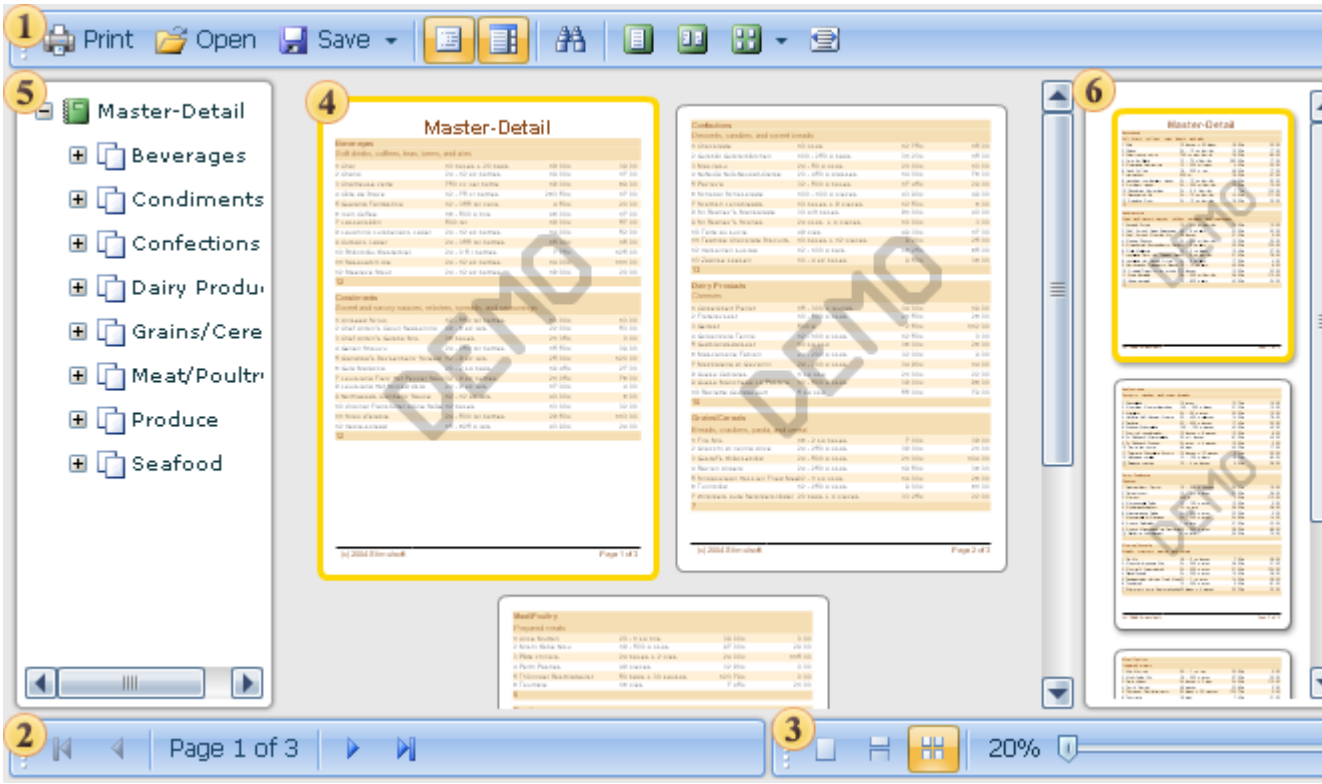
В данном случае, на всю область в текущем окне браузера будет отображен вьювер. Все остальные элементы. расположеные на aspx странице, отображены не будут.

## 10.2. Structure of WebViewerFx

The StiWebViewerFx component includes six basic parts. These are the top toolbar (allows executing basic manipulations with report); the bottom left toolbar is used for working with the currently selected page; the bottom right toolbar which has buttons which are used to show a report in the Viewer window and to control report zoom; central part is the zone where a report is shown. Also there is a bookmark panel on the left side of a viewer and the report thumbnails on the right side.




1. Main Toolbar.
2. Page Control Toolbar.
3. View Mode and Zoom Toolbars.
4. Report view.
5. Bookmarks panel.
6. Thumbnails panel.

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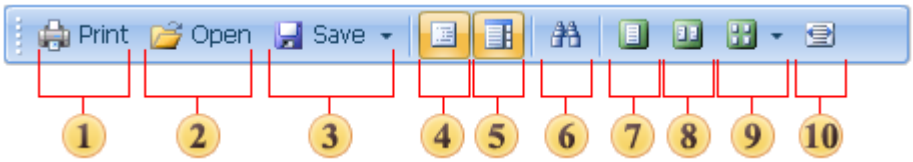
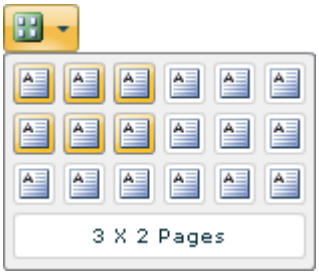
## 10.3. Main Toolbar of WebViewerFx

On the picture below the controls on the panel are marked.




1 Start report printing. After activation of this command the printing dialog with parameters of printing will be displayed.
2 Open previously saved report. Any rendered report can be saved to .mdc, .mdz and .mdx format for further preview.
3 Save the rendered report to other file formats.
4 Show/hide the tree of bookmarks. If there are no bookmarks in the rendered report then the viewer will automatically hide the tree of bookmarks. If there are bookmarks in a report, then the viewer will automatically show the tree of bookmarks.
5 Show/hide the reports thumbnails.
6 Enable the search panel.
7 Change zoom of the report to display only one full page. More than one page by the width can be output.
8 Change zoom of the report to display two pages on the screen.
9 Change zoom of the report according to horizontal and vertical sizes of pages.




10 Change zoom of the report to fit the page width to the screen width.

## 10.4. Page Navigation in WebViewerFx

On the picture below the toolbar that is used for report navigation is shown.

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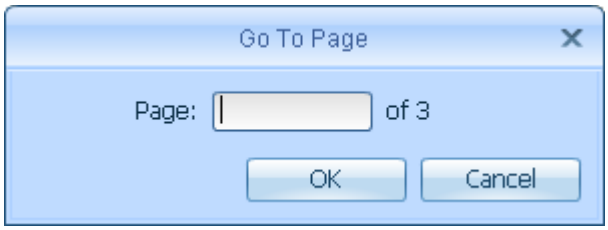
1 Set the first page of a report as the current page.
2 Set the previous page of a report as the current one.
3 Show the number of the current page and the number of pages in a report. If click on it then it is possible to indicate the number of a page that should be the current.




4 Set the next page of a report as the current one.
5 Set the last page of a report as the current page.

## 10.5. Page Viewing Modes

The **WebViewerFx** supports three modes of viewing pages:
1. **Single Page**
2. **Continuous**
3. **Multiple Pages**

Three buttons are used to control the page view mode. They are placed at the bottom of the viewer in the right corner.

Each mode has its own advantages.
**Single page.** In this mode the current page of a report is shown in the window of the viewer. The picture below shows how this mode works.

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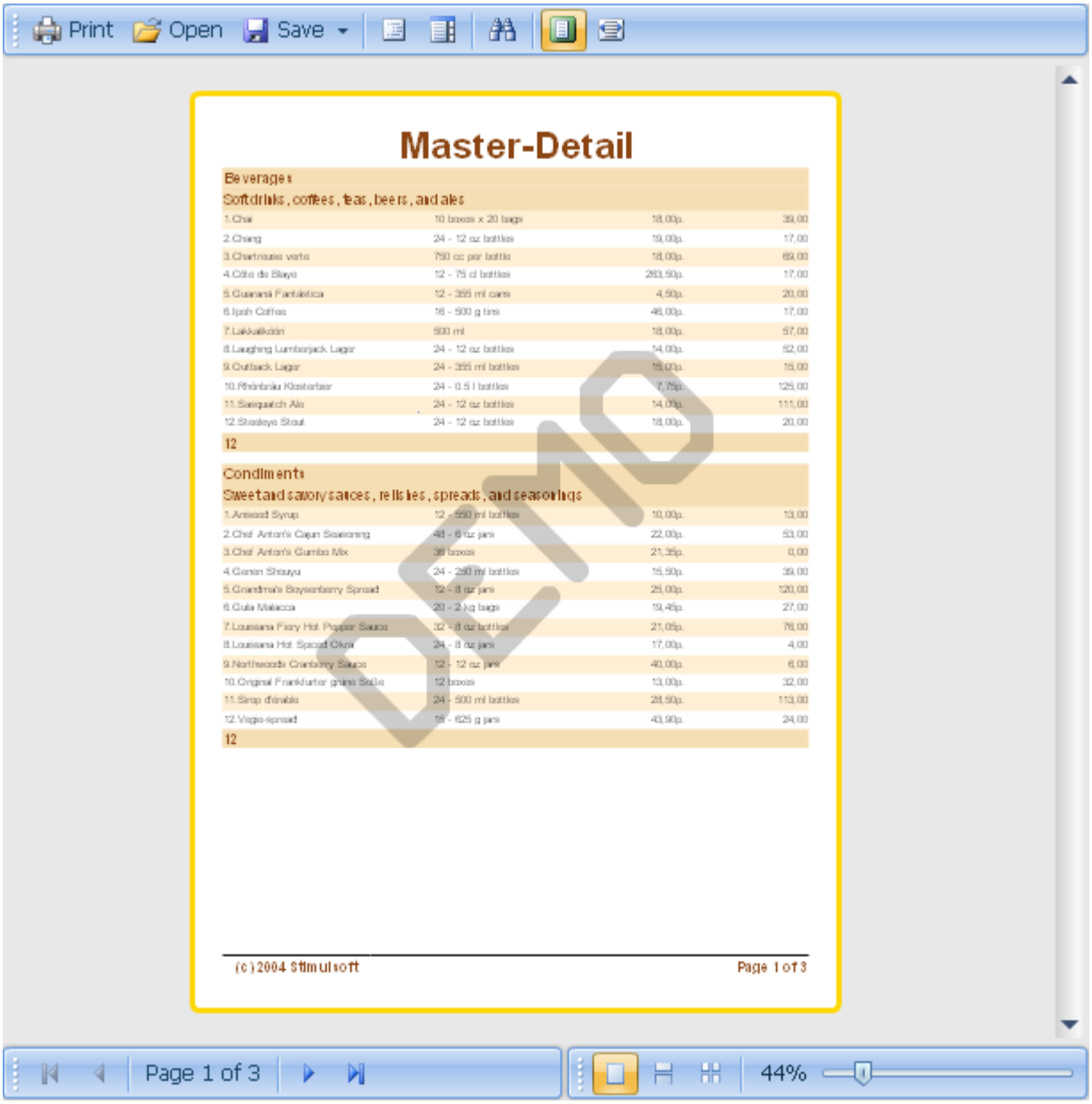
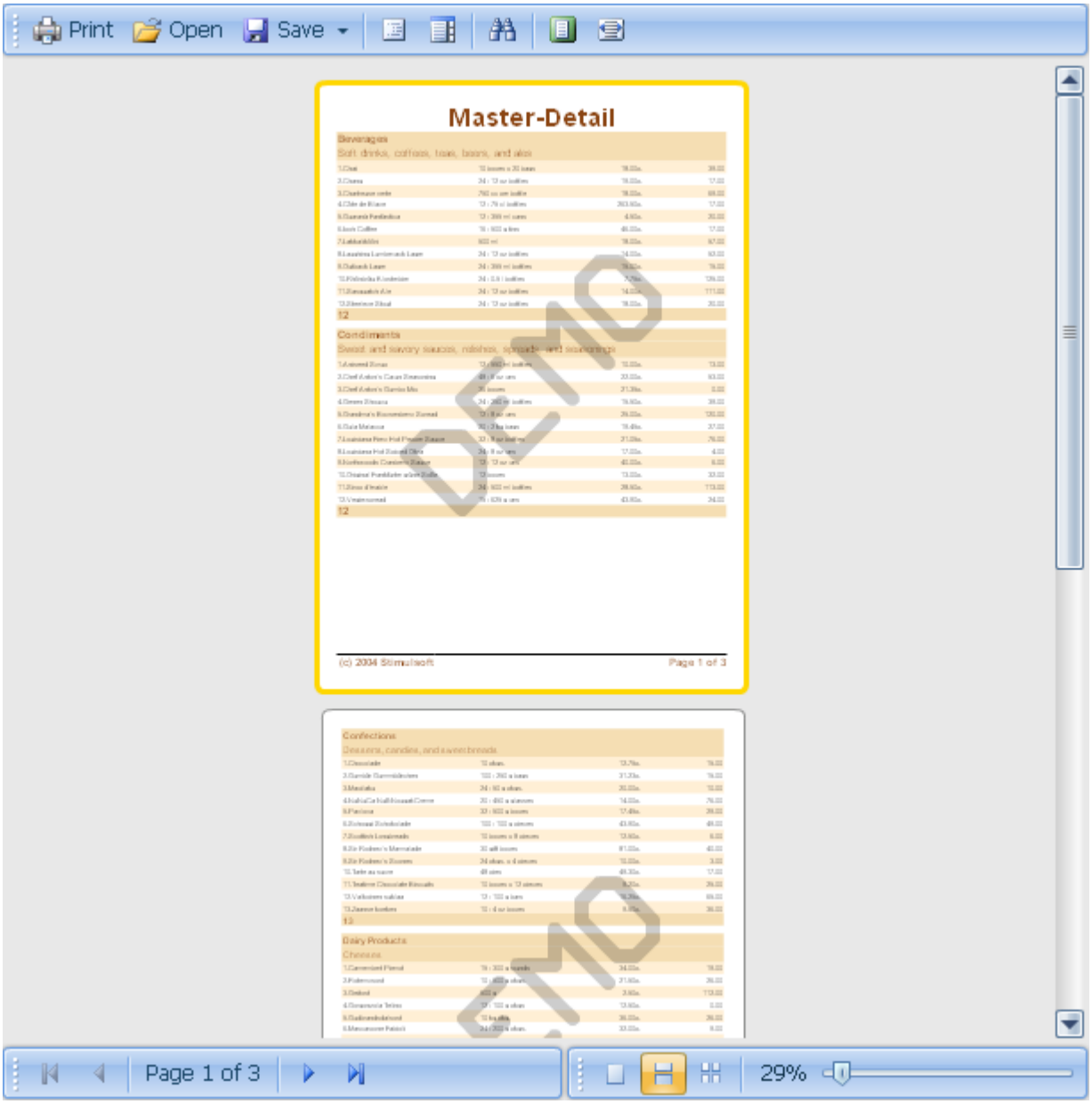



**Continuous.** In this mode all pages are placed into one vertical line. The picture below shows how this mode works.




**Multiple Pages.** In this mode as many pages in the selected zoom as they can fill the window of the viewer are shown. The picture below shows how this mode works.

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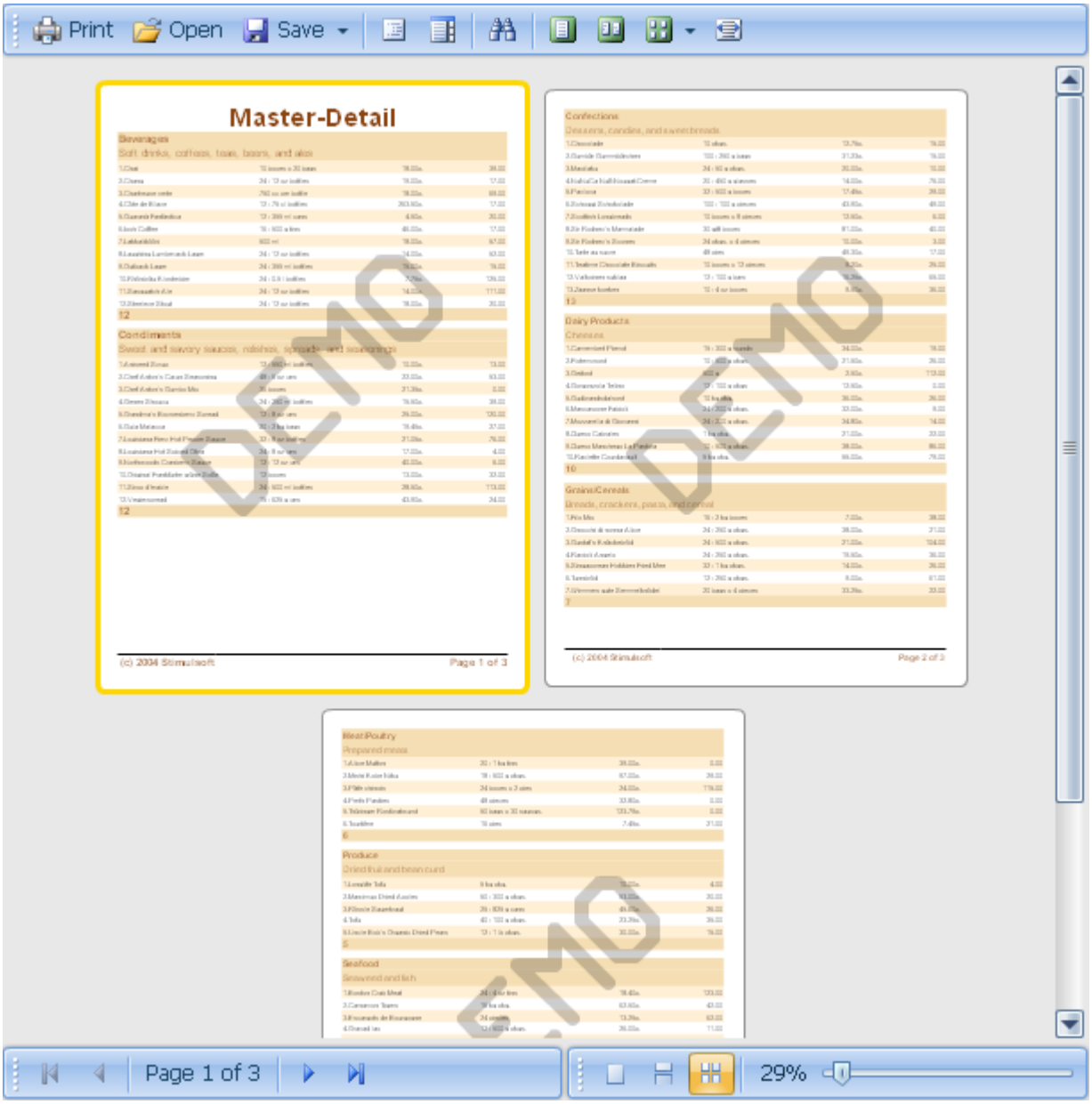


## 10.6. Search Panel

The search panel is used to search some text in the report. On the main toolbar this option can be enabled by clicking the binocular icon. All controls for search are placed on a single panel.

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1. Close the search panel.
2. The field where text that should be found is typed.
3. The button to run search.
4. If the flag is set, then search will be repeated considering the case.
5. If the flag is set, then search will be done considering the whole word.

## 10.7. Localization of StiWebViewerFx Component

To make the StiWebViewerFx component to "speak" another language it is necessary to copy a localization file of the standard delivery to the server to "Localization" folder. For example, select the "de.xml" file. Then define the name of default localization:

```
<cc1:StiWebViewerFx ID="StiWebViewerFx1" runat="server" Localization="en" />
```

## 10.8. Using Themes in WebViewerFx

The StiWebViewerFx component has the ability to change the theme of a viewer. The theme can be changed using the **ThemeName** property. For example, **ThemeName**="**Black**".

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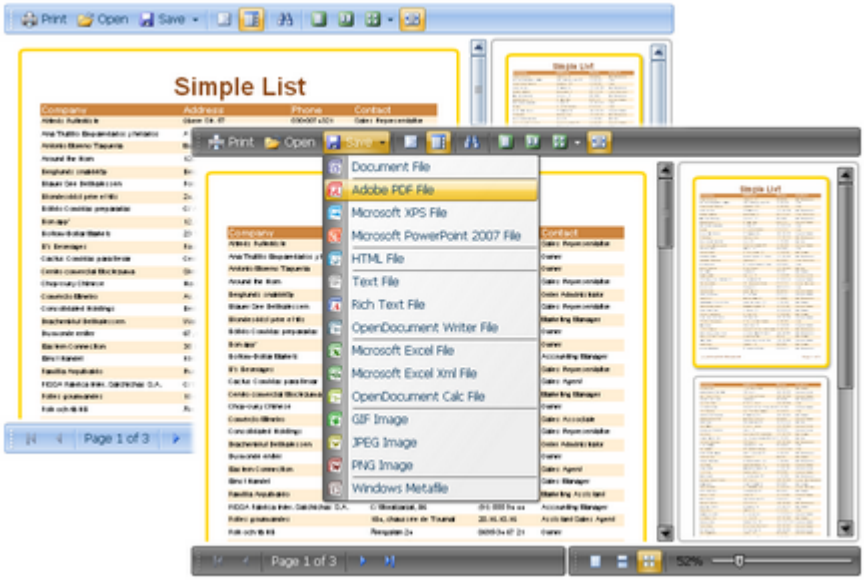


## 10.9. WebViewerFx Settings

Setting the **WebViewerFx** can be done using the static properties, which are described in the **StiWebViewerFxOptions.** class. Static properties of the **WebViewerFx** can be divided into following groups: Connection, Zooming and Toolbar.

### 10.9.1. Connection

The static properties described below belong to the **StiWebViewerFxOptions.Connection** group and responsible for option of connection the client and server sides:

- The **ClientRequestTimeout** property sets time (in seconds) that the client part will wait the response from the server side. The default value is 10 seconds;
- The **ClientRepeatCount** property sets the number of repeats of requests of the server side to the client side, when getting errors of obtaining data. The default value is 2 repeats;
- The **RelativeUrls** property allows using the relative **Url.** If the **RelativeUrls** is set to **false**, then the absolute **Url** is used. If the **RelativeUrls** is set to **true,** then the relative **Url** is used. By default, the value is set to **false**. A sample of the absolute and relative **Urls** is shown below**:**

http://localhost:4444/WebDesignerDemo/WebDesigner.aspx is an absolute **Url,** the **RelativeUrls** property is set to **false;**
/WebDesignerDemo/WebDesigner.aspx is a relative **Url,** the **RelativeUrls** property is set to **true** .

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## 10.9.2. Zooming

The **Zoom** group of static properties has one static property: **StiZoomMode**. Depending on the values of this property it is possible to set options of report template zoom. This property has the following values: **PageWidth**, **PageHeight**, **OnePage**, **Zoom25**, **Zoom50**, **Zoom75**, **Zoom100**, **Zoom150**, **Zoom200**.

- The **Default** value sets previously saved zoom of a report in **WebViewerFx**. So, if a report was saved with 37% zoom then, when opening it next time, 37% zoom of a report showing remains;
- The **PageWidth** value sets zoom by **Page Width**. So the width of the report template matches the width of the window of the web viewer;
- The **PageHeight** value sets zoom by **Page Height**. So the height of the report template matches the height of the window of the web viewer;
- The **OnePage** value sets zoom by **One Page**. So the entire page of the report template fits in the window of the web viewer;
- The **Zoom25**, **Zoom50**, **Zoom75**, **Zoom100**, **Zoom150**, **Zoom200** values set zoom level of the report template which is **25%, 50%, 75%, 100%, 150%, 200%**.

## 10.9.3. Viewer Static Properties

A group of **StiWebViewerFxOptions.Toolbar** static properties of the **WebViewerFx** is described below:

- The **ShowZoom** property is used to show/hide the zoom panel. If the **ShowZoom** property is set to **true**, then the **Zoom** panel is displayed. If the **ShowZoom** property is set to **false**, then the **Zoom** panel is not displayed. By default this property is set to **true**;

- The **ShowPrintButton** property is used to show/hide the **Print** button. If the **ShowPrintButton** property is set to **true**, then the **Print** button is shown. If the **ShowPrintButton** property is set to **true**, then the **Print** button is hidden. By default this property is set to **true**;

- The **ShowOpenButton** property is used to show/hide the **Open** button. If the **ShowOpenButton** property is set to **true**, then the **Open** button is shown. If the **ShowOpenButton** property is set to **true**, then the **Open** button is hidden. By default this property is set to **true**;

- The **ShowSaveButton** property is used to show/hide the **Save** button. If the **ShowSaveButton** property is set to **true**, then the **Save** button is shown. If the **ShowSaveButton** property is set to **true**, then the **Save** button is hidden. By default this property is set to **true**;

- The **ShowSendEMailButton** property is used to show/hide the **SendEMail** button. If the **ShowSendEMailButton** property is set to **true**, then the **SendEMail** button is shown. If the **ShowSendEMailButton** property is set to **true**, then the **SendEMail** button is hidden. By default this property is set to **true**;

- The **ShowPageNewButton** property is used to show/hide the **Page New** button. If the **ShowPageNewButton** property is set to **true**, then the **Page New** button is shown. If the **ShowPageNewButton** property is set to **true**, then the **Page New** button is hidden. By default

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this property is set to **true**;

- The **ShowPageDeleteButton** property is used to show/hide the **Page Delete** button. If the **ShowPageDeleteButton** property is set to **true**, then the **Page Delete** button is shown. If the **ShowPageDeleteButton** property is set to **true**, then the **Page Delete** button is hidden. By default this property is set to **true**;

- The **ShowPageSizeButton** property is used to show/hide the **Page Size** button. If the **ShowPageSizeButton** property is set to **true**, then the **Page Size** button is shown. If the **ShowPageSizeButton** property is set to **true**, then the **Page Size** button is hidden. By default this property is set to **true**;

- The **ShowBookmarksButton** property is used to show/hide the **Bookmarks** button. If the **ShowBookmarksButton** property is set to **true**, then the **Bookmarks** button is shown. If the **ShowBookmarksButton** property is set to **true**, then the **Bookmarks** button is hidden. By default this property is set to **true**;

- The **ShowThumbnailsButton** property is used to show/hide the **Thumbnails** button. If the **ShowThumbnailsButton** property is set to **true**, then the **Thumbnails** button is shown. If the **ShowThumbnailsButton** property is set to **true**, then the **Thumbnails** button is hidden. By default this property is set to **true**;

- The **ShowFindButton** property is used to show/hide the **Find** button. If the **ShowFindButton** property is set to **true**, then the **Find** button is shown. If the **ShowFindButton** property is set to **true**, then the **Find** button is hidden. By default this property is set to **true**;

- The **ShowEditButton** property is used to show/hide the **Edit** button. If the **ShowEditButton** property is set to **true**, then the **Edit** button is shown. If the **ShowEditButton** property is set to **true**, then the **Edit** button is hidden. By default this property is set to **true**;

- The **ShowFirstPageButton** property is used to show/hide the **First Page** button. If the **ShowFirstPageButton** property is set to **true**, then the **First Page** button is shown. If the **ShowFirstPageButton** property is set to **true**, then the **First Page** button is hidden. By default this property is set to **true**;

- The **ShowPreviousPageButton** property is used to show/hide the **Previous Page** button. If the **ShowPreviousPageButton** property is set to **true**, then the **Previous Page** button is shown. If the **ShowPreviousPageButton** property is set to **true**, then the **Previous Page** button is hidden. By default this property is set to **true**;

- The **ShowGoToPageButton** property is used to show/hide the **Go to Page** button. If the **ShowGoToPageButton** property is set to **true**, then the **Go to Page** button is shown. If the **ShowGoToPageButton** property is set to **true**, then the **Go to Page** button is hidden. By default this property is set to **true**;

- The **ShowNextPageButton** property is used to show/hide the **Next Page** button. If the **ShowNextPageButton** property is set to **true**, then the **Next Page** button is shown. If the **ShowNextPageButton** property is set to **true**, then the **Next Page** button is hidden. By default this property is set to **true**;

- The **ShowLastPageButton** property is used to show/hide the **Last Page** button. If the

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**ShowLastPageButton** property is set to **true**, then the **Last Page** button is shown. If the **ShowLastPageButton** property is set to **true**, then the **Last Page** button is hidden. By default this property is set to **true**;

- The **ShowPageViewModeSingleButton** property is used to show/hide the **Single Page** button. If the **ShowPageViewModeSingleButton** property is set to **true**, then the **Single Page** button is shown. If the **ShowPageViewModeSingleButton** property is set to **true**, then the **Single Page** button is hidden. By default this property is set to **true**;

- The **ShowPageViewModeContinuousButton** property is used to show/hide the **Continuous** button. If the **ShowPageViewModeContinuousButton** property is set to **true**, then the **Continuous** button is shown. If the **ShowPageViewModeContinuousButton** property is set to **true**, then the **Continuous** button is hidden. By default this property is set to **true**;

- The **ShowPageViewModeMultipleButton** property is used to show/hide the **Multiple Pages** button. If the **ShowPageViewModeMultipleButton** property is set to **true**, then the **Multiple Pages** button is shown. If the **ShowPageViewModeMultipleButton** property is set to **true**, then the **Multiple Pages** button is hidden. By default this property is set to **true**;

## 10.10. Properties

The properties of **WebViewerFx** are described below:

1. The **ServerTimeout** property is used to define time of storing a report in the server cache. By default, this property is set to **"00:10:00"**, this means that the report is stored **10** minutes in the server cache and then it is removed.
2. The **Background** property is used to change the background color. By default, this property is set to **White**, this means that the background color is white. It is also possible to set any color in the **#rrggbb** format and transparent color.
3. The **DataEncryption** property is used to enable/disable data encryption. If the **DataEncryption** property is set to **false**, then data are not encrypted. If the **DataEncryption** property is set to **true**, then data are encrypted. By default, this property is set to **false**.
4. The **DataCompression** property is used to enable/disable data compression. If the **DataCompression** property is set to **false**, then data are not compressed. If the **DataCompression** property is set to **true**, then data are compressed. By default, this property is set to **true**.
5. The **AppCacheDirectory** property is used to indicate the path to the directory on the server, to what file caching of the **Flash**-application will occur. For this you need to set full access of the **ASP.NET** application to this folder.
6. The **LocalizationDirectory** property is used to specify the path to the folder where localization **.xml** files are stored. The folder should be placed in the root directory of the project. A code sample for specifying the path to the folder with localization files is shown below (for example, the **Languages** folder):

```
<cc1:StiWebDesigner ID="StiWebViewerFx1" runat="server" DirectoryLocalization="\\Files\
\Languages\\" />
```

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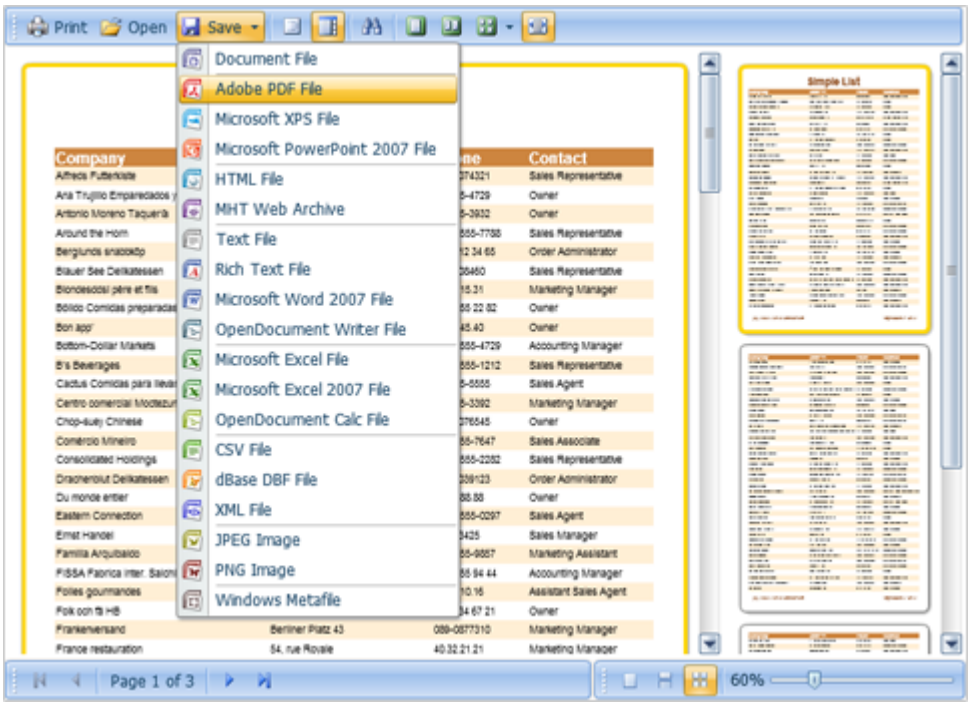
7. The **Localization** property is used to specify the ability to localize the **WebViewerFx** UI in any of 24 languages available. The **Localization** property should be set to the value. The value is the **.xml** file in the **Localization** folder of the root directory in the project). By default, this property is set to "**en**", this means that the UI is localized in English. A code sample for setting the **Localization** property of the **WebViewerFx** UI to **English** language ("**en**") is shown below**:**

```
<cc1:StiWebDesigner ID="StiWebViewerFx1" runat="server" Localization="en" />
```

7. The **ImageQuality** property is used to change the quality of images in the report. depending on the value of this property it is possible to change the image file size and image quality. If the **ImageQuality** property is set to **Lo**, then the file size and quality will be low. If the **ImageQuality** property is set to **Normal**, then the file size and quality will have optimal ratio between size and quality. If the **ImageQuality** property is set to **High**, then the file size and quality will be highest.
8. The **ThemeName** property is used to change the style the theme of the **WebViewerFx**. If the **ThemeName** property is set to **Blue**, then the style of the viewer will be as shown on the picture below:




If the **ThemeName** property is set to **Silver**, then the style of the viewer will look as shown on the picture below:

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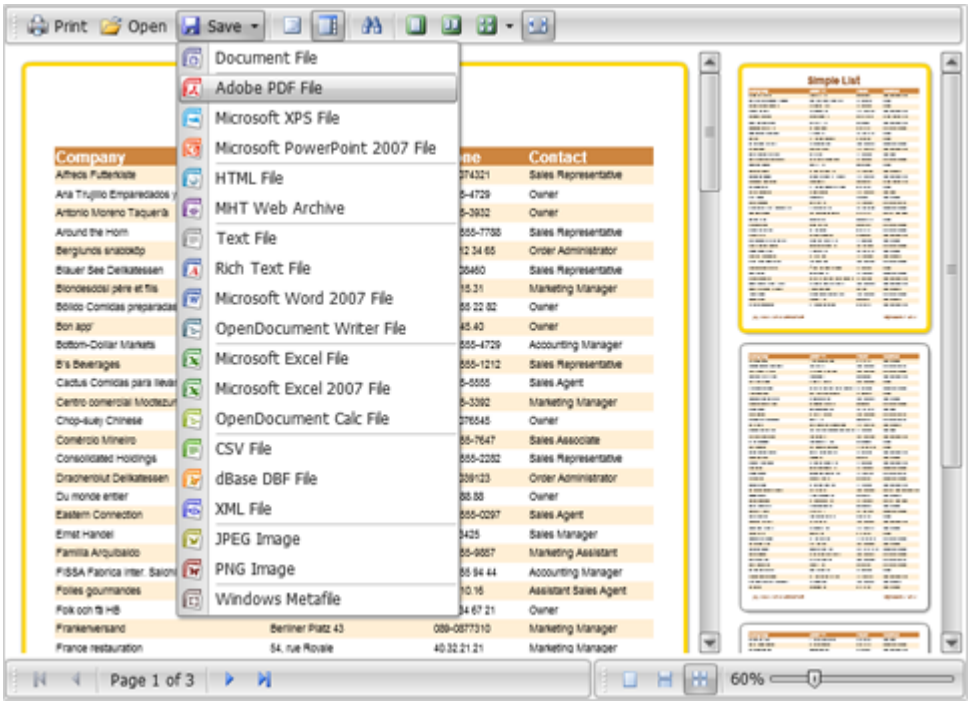
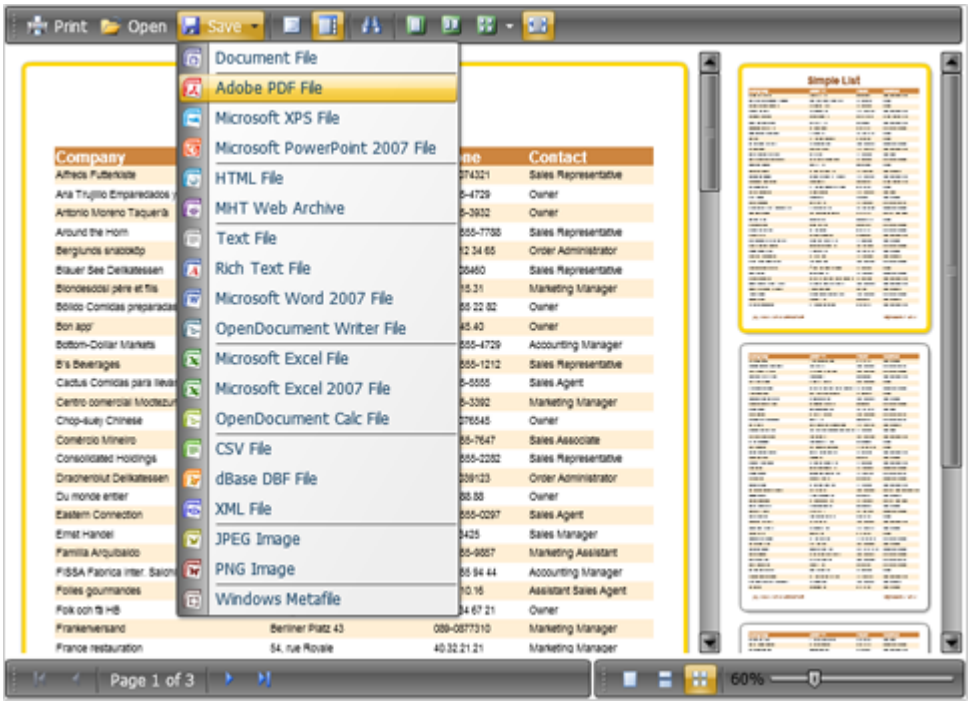



If the **ThemeName** property is set to **Black**, then the style of the viewer will look as shown on the picture below:

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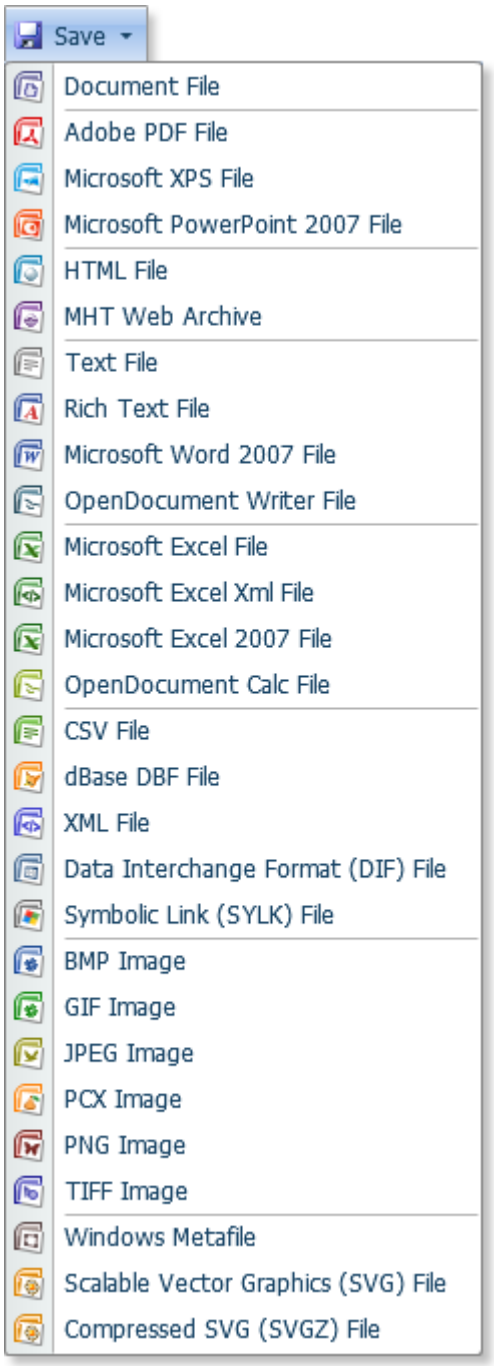
## 10.11. Setting Export

It is possible to customize a list of export formats. In other words, it is possible to hide unused export formats. Customization of the export formats list can be done by using the **WebViewerFx** properties. For example - export to **HTML**. Availability of this format in the list of formats for export depends on the value of the **ShowExportToHtml** property. The picture below shows the full list of formats:

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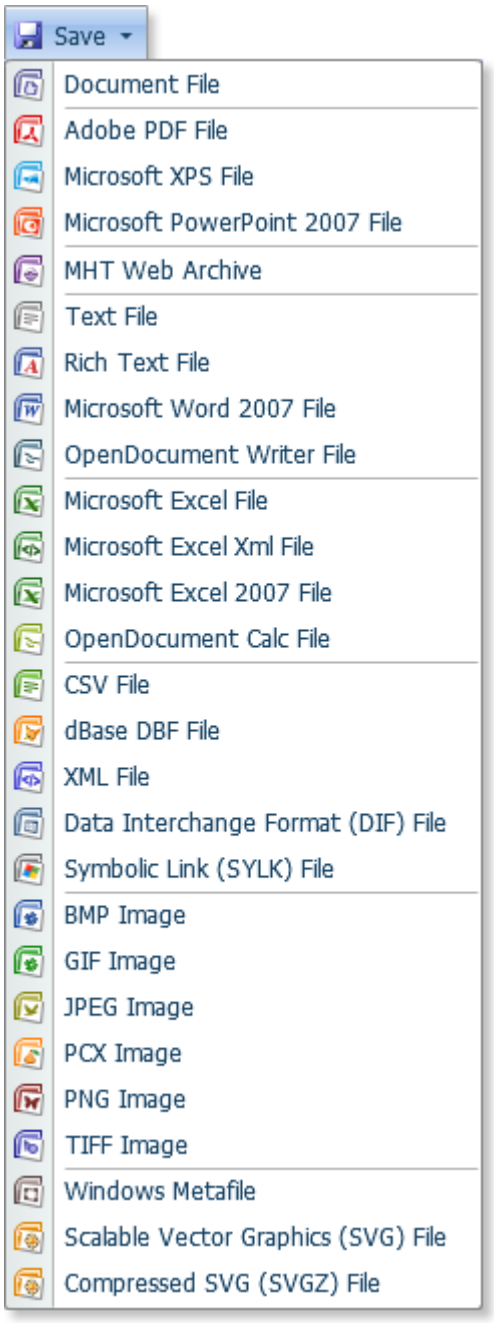
as seen on the picture above the **Html** format is shown in the list of formats, and this means that the **ShowExportToHtml** property is set to **true**. If the set this property to **false** (code below):

```
<cc1:StiWebViewerFx ID=" StiWebViewerFx1" runat="server" ShowExportToHtml="False" />
```

then the **HTML** format will not be shown in the list of export formats. The picture below shows a list of formats without **HTML**:

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By default, all export formats are shown.

## 10.12. Data

To preview the report data are required. By default, data are taken from the **Dictionary** of the edited report. If necessary, they can be overridden. To do this you need to add the handler to the **GetDataSet** event. There is a sample code below using what data can be overridden:

```
C#:

protected void StiWebDesigner1_GetDataSet(object sender,StiWebDesigner.
StiPreviewDataSetEventArgs e)
{
    DataSet data = new DataSet();
    data.ReadXml("D:\\Demo.xml");
    data.ReadXmlSchema("D:\\Demo.xsd");
    e.DataSet = data;
}

VB.NET:

Protected Sub StiWebDesigner1_GetDataSet(ByVal sender As Object,
                                                    ByVal e As StiWebDesigner.
StiPreviewDataSetEventArgs)
    Dim data As DataSet = New DataSet()
    data.ReadXml("D:\\Demo.xml")
    data.ReadXmlSchema("D:\\Demo.xsd")
    e.DataSet = data
End Sub
```

As seen from code, data are taken from **XML** and **XSD** files. The same way exists for other data sources.

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# Part XI

# Using WebViewerSL

# 11. Using WebViewerSL

The **StiWebViewerSL** component is delivered as a part of **Stimulsoft Reports.WebSL**. The component is used for showing reports in the **web** browser.

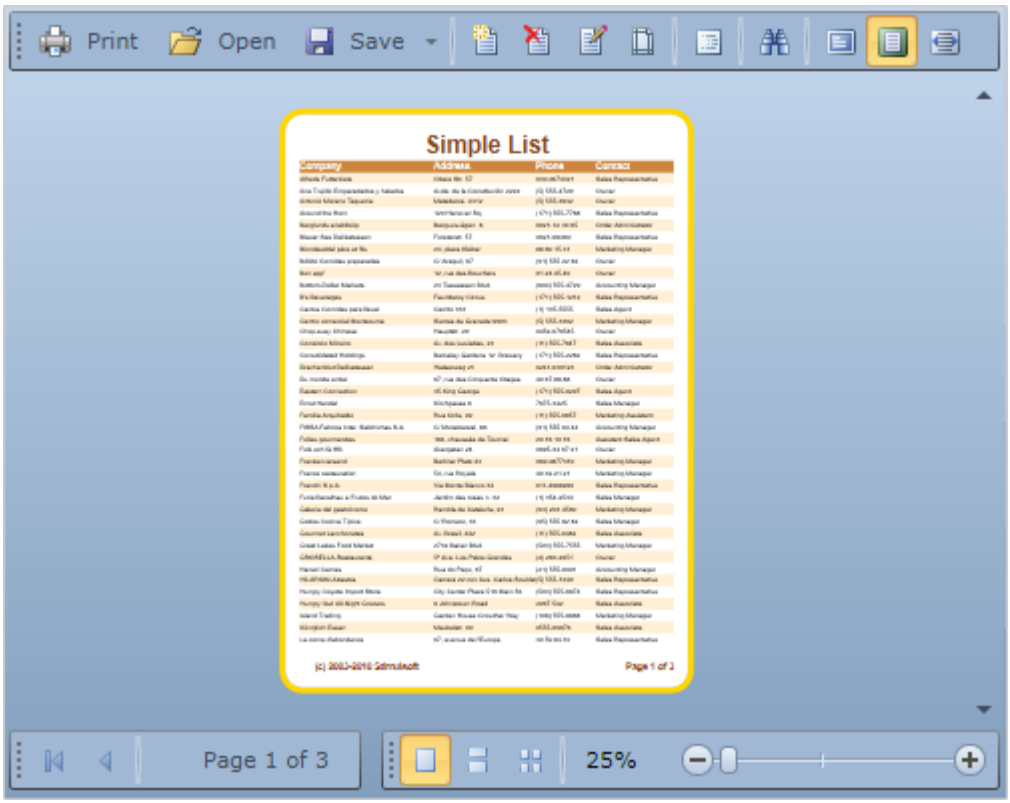
## 11.1. How to Show Report?

Put the **StiWebViewerSL** component on a web page. Then you need to use the following code to show a report

C#

```
Stimulsoft.Report.StiReport report = new Stimulsoft.Report.StiReport();
report.Load("Simple_List.mrt");
webViewerSL1.Report = report;
```

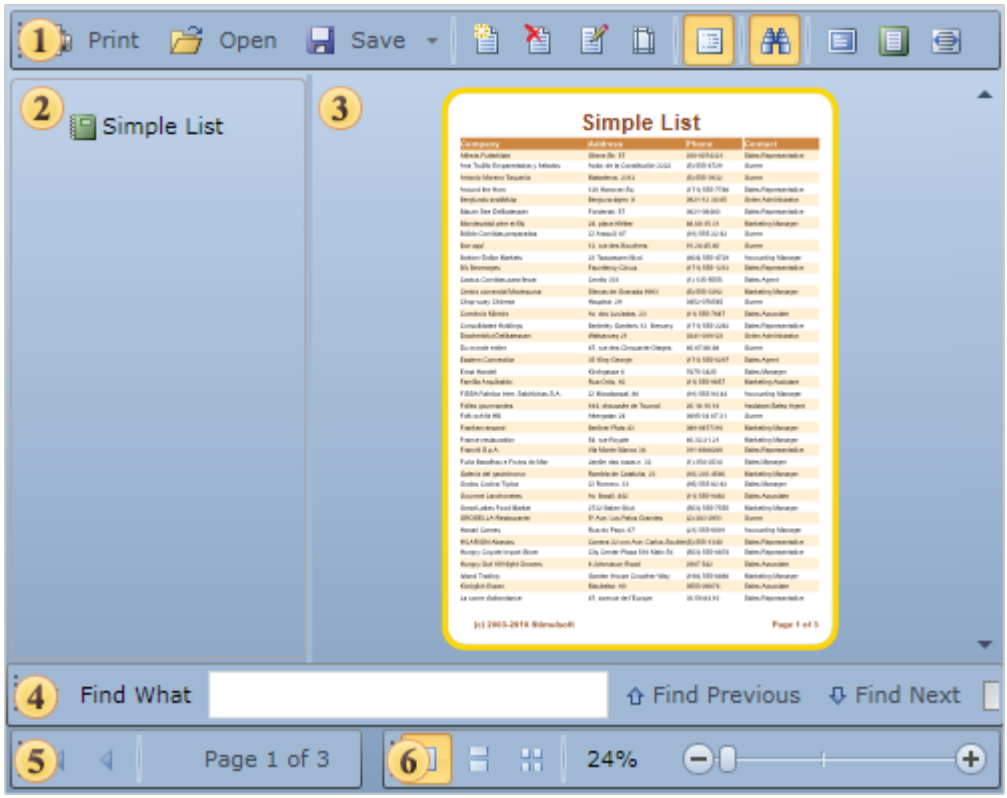
If the report was not rendered before showing, then the **WebViewerSL** component renders it automatically



Also the viewer supports loading reports using the **Drag&Drop**.

## 11.2. Structure of WebViewerSL

The picture below shows basic items of the report viewer.




1. Main Toolbar.
2. Bookmarks panel.
3. Report view.
4. Search panel.
5. Page Control Toolbar.
6. View Mode and Zoom Toolbar.

## 11.3. Main Toolbar of WebViewerSL

The picture below shows the main toolbar:

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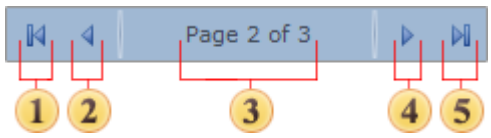
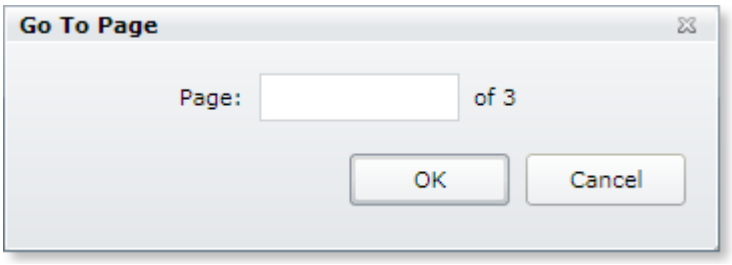
1 Runs report printing. After activation of this command the printing dialog with parameters of printing will be displayed.
2 Opens previously saved report. Any rendered report can be saved to .mdc or .mdz format for further preview.
3 Saves the rendered report to other file formats.
4 Adds a new empty page to the rendered report.
5 Deletes the current page of a report.
6 Open the reports designer and show the current page for editing.
7 Opens the window of changing basic parameters of the rendered report.
8 Shows/hides the tree of bookmarks. If there are no bookmarks in the rendered report then the viewer will automatically hide the tree of bookmarks. If there are bookmarks in a report, then the viewer will automatically show the tree of bookmarks.
9 Enables the search panel
10 Runs the full screen mode of report showing.
11 Changes zoom of the report to display only one full page. More than one page by the width can be output.
12 Changes zoom of the report to display two pages on the screen.
13 Changes zoom of the report according to horizontal and vertical sizes of pages.

## 11.4. Navigation Page in WebViewerSL

On the picture below the toolbar that is used for report navigation is shown.




1 Set the first page of a report as the current page.
2 Set the previous page of a report as the current one.
3 Show the number of the current page and the number of pages in a report. If click on it then it is possible to indicate the number of a page that should be the current.

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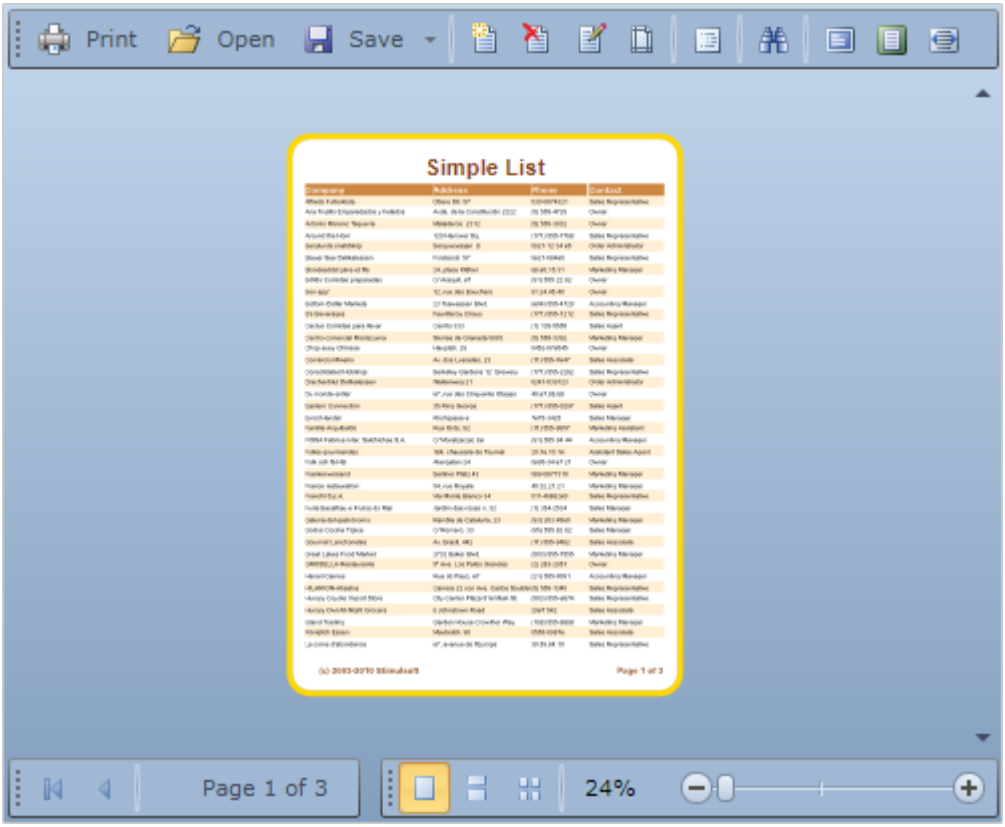
4. Set the next page of a report as the current one.
5. Set the last page of a report as the current page.

## 11.5. Page Viewing Modes

**WebViewerSL** supports three modes of viewing pages:
1. **Single Page**
2. **Continuous**
3. **Multiple Pages**

Three buttons are used to control the page view mode. They are placed at the bottom of the viewer in the right corner.

Each mode has its own advantages.
**Single page.** In this mode the current page of a report is shown in the window of the viewer. The picture below shows how this mode works.




**Continuous.** In this mode all pages are placed into one vertical line. The picture below shows how

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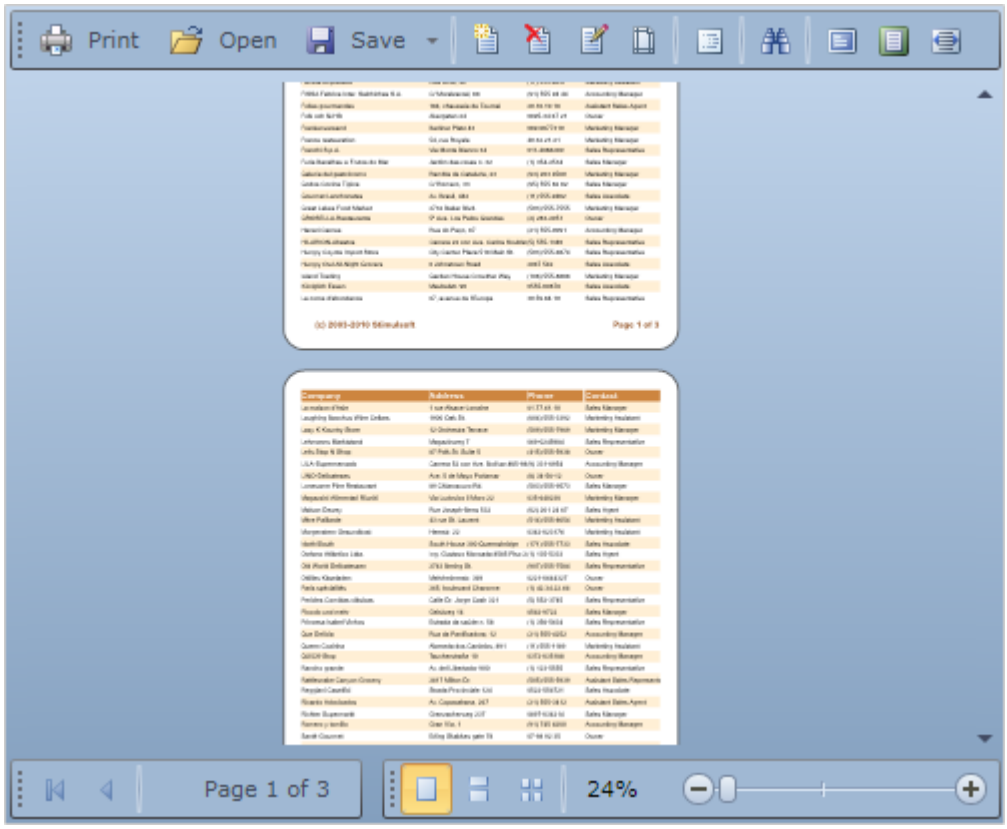
this mode works.




**Multiple Pages.** In this mode as many pages in the selected zoom as they can fill the window of the viewer are shown. The picture below shows how this mode works.

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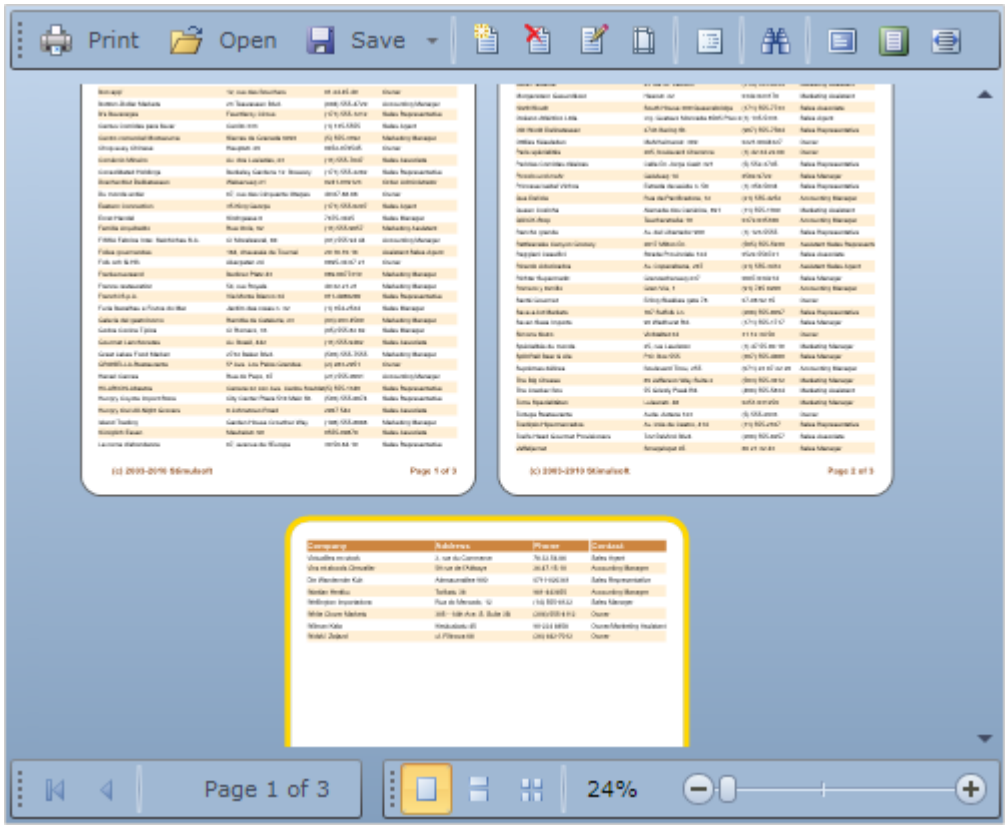


## 11.6. Search Panel

The search panel is used to search some text in the report. On the main toolbar this option can be enabled by clicking the binocular icon. All controls for search are placed on a single panel.

1. Close the search panel.
2. The field where text that should be found is typed.
3. Finds the previous occurrence of the phrase.
4. Finds the next occurrence of the phrase.
5. If the flag is set, then search will be repeated considering the case.
6. If the flag is set, then search will be done considering the whole word.

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# 11.7. WebViewerSL Settings

Setting the **WebViewerSL** can be done using the properties, which are described in the **StiWebViewerSL** class.

## 11.7.1. Control Panel

A list of properties for customizing the **WebViewerSL** toolbar:

- The **ShowMainToolBar** property shows/hides the **Toolbar**. If the **ShowMainToolBar** property is set to **true**, then the **ToolBar** will be shown. If the **ShowMainToolBar** property is set to **false**, then the **ToolBar** will be hidden. By default the property is set to **true**;
- The **ShowPrintButton** property shows/hides the **Print** button. If the **ShowPrintButton** property is set to **true**, then the **Print** button will be shown. If the **ShowPrintButton** property is set to **false**, then the **Print** button will be hidden. By default the property is set to **true**;
- The **ShowReportOpenButton** property shows/hides the **Open** button. If the **ShowReportOpenButton** property is set to **true**, then the **Open** button will be shown. If the **ShowReportOpenButton** property is set to **false**, then the **Open** button will be hidden. By default the property is set to **true**;
- The **ShowReportSaveButton** property shows/hides the **Save** button. If the **ShowReportSaveButton** property is set to **true**, then the **Save** button will be shown. If the **ShowReportSaveButton** property is set to **false**, then the **Save** button will be hidden. By default the property is set to **true**;
- The **ShowPageNewButton** property shows/hides the **Page New** button. If the **ShowPageNewButton** property is set to **true**, then the **Page New** button will be shown. If the **ShowPageNewButton** property is set to **false**, then the **Page New** button will be hidden. By default the property is set to **true**;
- The **ShowPageDeleteButton** property shows/hides the **Page Delete** button. If the **ShowPageDeleteButton** property is set to **true**, then the **Page Delete** button will be shown. If the **ShowPageDeleteButton** property is set to **false**, then the **Page Delete** button will be hidden. By default the property is set to **true**;
- The **ShowPageDesignButton** property shows/hides the **Edit** button. If the **ShowPageDesignButton** property is set to **true**, then the **Edit** button will be shown. If the **ShowPageDesignButton** property is set to **false**, then the **Edit** button will be hidden. By default the property is set to **true**;
- The **ShowPageSizeButton** property shows/hides the **Page Size** button. If the **ShowPageSizeButton** property is set to **true**, then the **Page Size** button will be shown. If the **ShowPageSizeButton** property is set to **false**, then the **Page Size** button will be hidden. By default the property is set to **true**;

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- The **ShowBookmarksPanel** property shows/hides the **Bookmarks** panel. If the **ShowBookmarksPanel** property is set to **true**, then the **Bookmarks** panel button will be shown. If the **ShowBookmarksPanel** property is set to **false**, then the **Bookmark** panel will be hidden. By default the property is set to **true**;

- The **ShowToolFindButton** property shows/hides the **Find** button. If the **ShowToolFindButton** property is set to **true**, then the **Find** button will be shown. If the **ShowToolFindButton** property is set to **false**, then the **Find** button will be hidden. By default the property is set to **true**;

- The **ShowFullScreenButton** property shows/hides the **Full Screen** button. If the **ShowFullScreenButton** property is set to **true**, then the **Full Screen** button will be shown. If the **ShowFullScreenButton** property is set to **false**, then the **Full Screen** button will be hidden. By default the property is set to **true**;

- The **ShowZoomOnePageButton** property shows/hides the **One Page** button. If the **ShowZoomOnePageButton** property is set to **true**, then the **One Page** button will be shown. If the **ShowZoomOnePageButton** property is set to **false**, then the **One Page** button will be hidden. By default the property is set to **true**;

- The **ShowZoomTwoPagesButton** property shows/hides the **Two Pages** button. If the **ShowZoomTwoPagesButton** property is set to **true**, then the **Two Pages** button will be shown. If the **ShowZoomTwoPagesButton** property is set to **false**, then the **Two Pages** button will be hidden. By default the property is set to **true**;

- The **ShowZoomPageWidthButton** property shows/hides the **Page Width** button. If the **ShowZoomPageWidthButton** property is set to **true**, then the **Page Width** button will be shown . If the **ShowZoomPageWidthButton** property is set to **false**, then the **Page Width** button will be hidden. By default the property is set to **true**;

- The **ShowToolEditorButton** property shows/hides the **Tool Editor** button. If the **ShowToolEditorButton** property is set to **true**, then the **Tool Editor** button will be shown. If the **ShowToolEditorButton** property is set to **false**, then the **Tool Editor** button will be hidden. By default the property is set to **true**;

### 11.7.2. Navigation Panel

The properties of the **WebViewerSL** navigation panel are described below.

- The **ShowFirstPageButton** property shows/hides the **First Page** button. If the **ShowFirstPageButton** property is set to **true**, then the **First Page** button will be shown. If the **ShowFirstPageButton** property is set to **false**, then the **First Page** button will be hidden. By default the property is set to **true**;

- The **ShowPageLastButton** property shows/hides the **Last Page** button. If the **ShowPageLastButton** property is set to **true**, then the **Last Page** button will be shown. If the **ShowPageLastButton** property is set to **false**, then the **Last Page** button will be hidden. By default the property is set to **true**;

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- The **ShowPageGoToButton** property shows/hides the **Go to Page** button. If the **ShowPageGoToButton** property is set to **true**, then the **Go to Page** button will be shown. If the **ShowPageGoToButton** property is set to **false**, then the **Go to Page** button will be hidden. By default the property is set to **true**;

- The **ShowPageNextButton** property shows/hides the **Next Page** button. If the **ShowPageNextButton** property is set to **true**, then the **Next Page** button will be shown. If the **ShowPageNextButton** property is set to **false**, then the **Next Page** button will be hidden. By default the property is set to **true**;

- The **ShowPreviousPageButton** property shows/hides the **Previous Page** button. If the **ShowPreviousPageButton** property is set to **true**, then the **Previous Page** button will be shown. If the **ShowPreviousPageButton** property is set to **false**, then the **Previous Page** button will be hidden. By default the property is set to **true**;

### 11.7.3. Zooming

The properties of the **WebViewerSL** Zoom panel are described below.

- The **ShowPageViewSingleModeButton** property shows/hides the **Single Page** button. If the **ShowPageViewSingleModeButton** property is set to **true**, then the **Single Page** button will be shown. If the **ShowPageViewSingleModeButton** property is set to **false**, then the **Single Page** button will be hidden. By default the property is set to **true**;

- The **ShowPageViewContinuousModeButton** property shows/hides the **Continuous** button. If the **ShowPageViewContinuousModeButton** property is set to **true**, then the **Continuous** button will be shown. If the **ShowPageViewContinuousModeButton** property is set to **false**, then the **Continuous** button will be hidden. By default the property is set to **true**;

- The **ShowPageViewMultipleModeButton** property shows/hides the **Multiple Pages** button. If the **ShowPageViewMultipleModeButton** property is set to **true**, then the **Multiple Pages** button will be shown. If the **ShowPageViewMultipleModeButton** property is set to **false**, then the **Multiple Pages** button will be hidden. By default the property is set to **true**;

- The **ShowSliderZoomControl** property shows/hides the **Zoom** slider. If the **ShowZoom** property is set to **true**, then the slider will be shown. If the **ShowZoom** property is set to **false**, then the **Zoom** slider will be hidden. By default the property is set to **true.**

- The **ZoomMode** is used to change report zoom. This property has the following values: **Default**, **OnePage**, **TwoPages**, **PageWidth**.
  - The **Default** value sets previously saved zoom of a report in **WebViewerSL**. So, if a report was saved with 37% zoom then, when opening it next time, 37% zoom of a report showing remains;
  - The **PageWidth** value sets zoom by **Page Width**. So the width of the report template matches the width of the window of the web designer;
  - The **OnePage** value sets zoom by **One Page**. So the entire page of the report template fits in the window of the web viewer;

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- The **TwoPages** value sets zoom by **Two Pages**. So two pages of a report fit by height and width the window of the **WebViewerSL**.

- The **Zoom** provides an opportunity to zoom in the viewer. This property can take any value from **0** to **100**, where the value of the **Zoom** is the zoom percentage. For example, if the **Zoom** property is set to **70**, the zoom in the viewer will be equal to **70** percent.

## 11.8. Saving Mode

When you export a report to any format, saving the report will take place in one of the following saving modes: **Client** or **Server**. Using the **SaveMode** property it is possible to change the mode of saving. If the **SaveMode** property id set to **Client**, then the report will be saved on the client side of the **WebViewerSL** application by means of **Silverlight** without a server. If the **SaveMode** property is set to **Server**, then saving the report will take place directly on the server, and after saving the report will be transferred to the client side. Depending on the value of the **SaveMode** property user will see different the lists of export formats. The picture below shows lists of exports in various saving modes:

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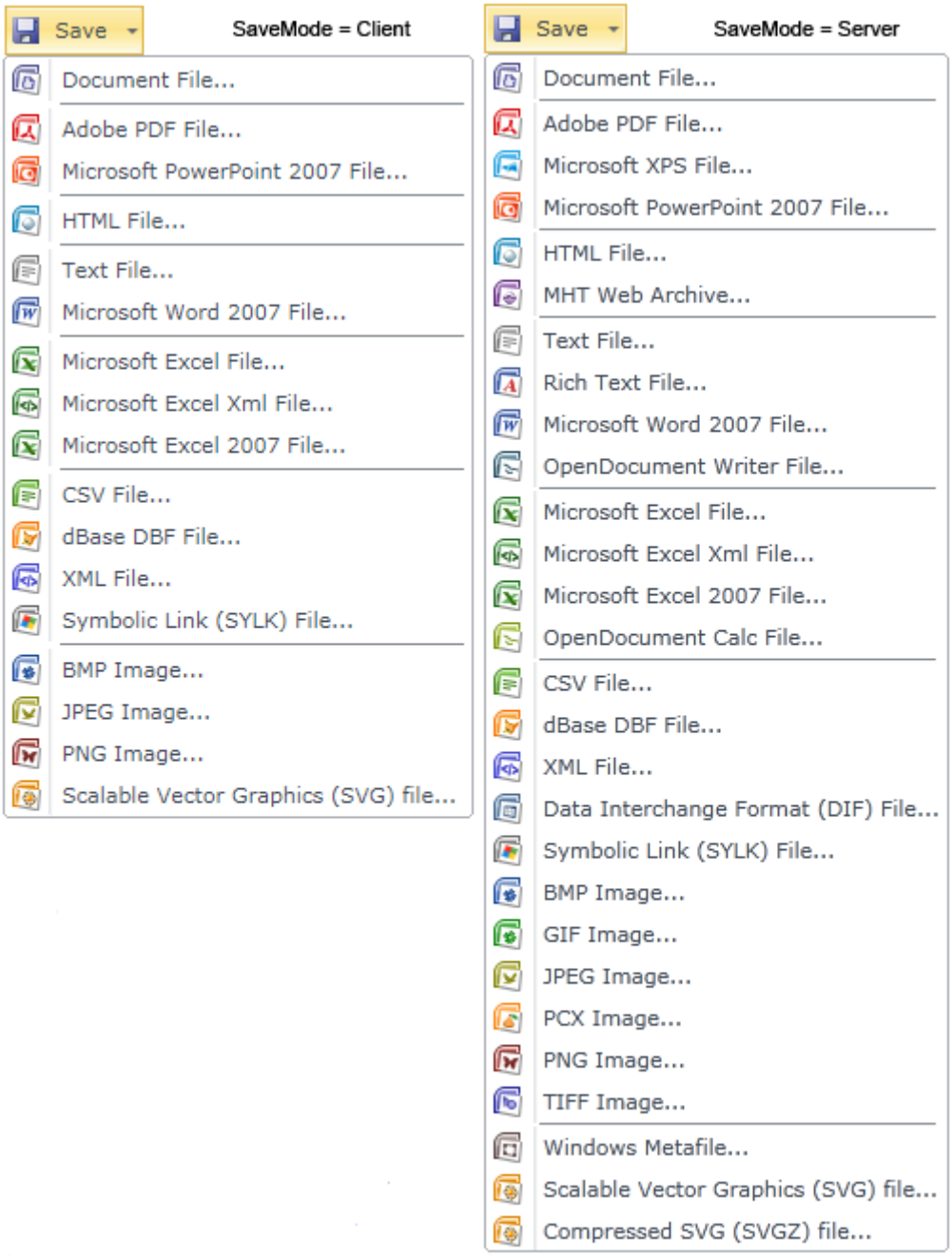


## 11.8.1. Export Settings

A report opened in **WebViewerSL** can be exported to many different formats. The list of formats for export can be customized. In other words, you can hide unused export formats. Customization of the list of formats of exports can be made by means of **WebViewerSL** properties. For the example the **HTML** format, in the **Client** saving mode. Showing of this format in the list of formats for export depends on the value of the **ShowHtmlButton** property. The picture below shows the complete list

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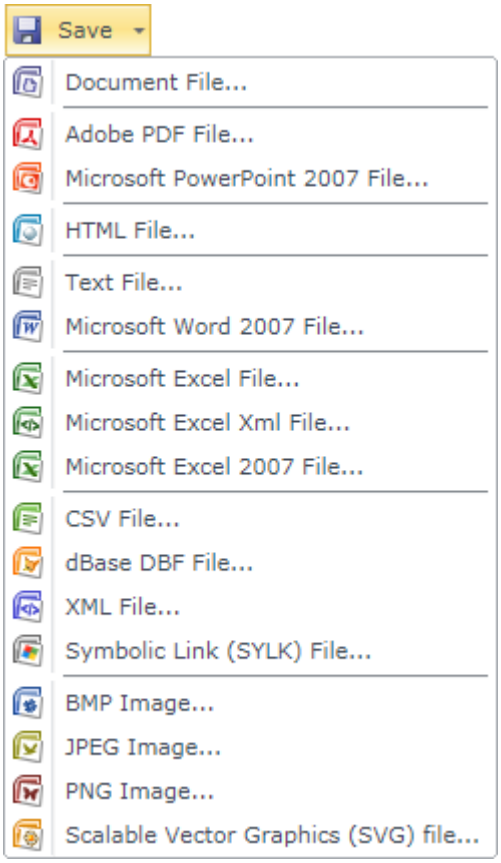
of formats in the **Client** save mode:




As can be seen from the picture above, the **HTML** format is displayed in the list of formats that corresponds to the **ShowHtmlButton** property set to **true**. If you set this property to false:

```
<cc1:StiWebViewerSL ID=" StiWebViewerSL1" runat="server" ShowHtmlButton
="False" />
```

then the **HTML** will not be displayed in the list of formats for exporting. The picture below shows a list of formats for exporting without the **Html** format:

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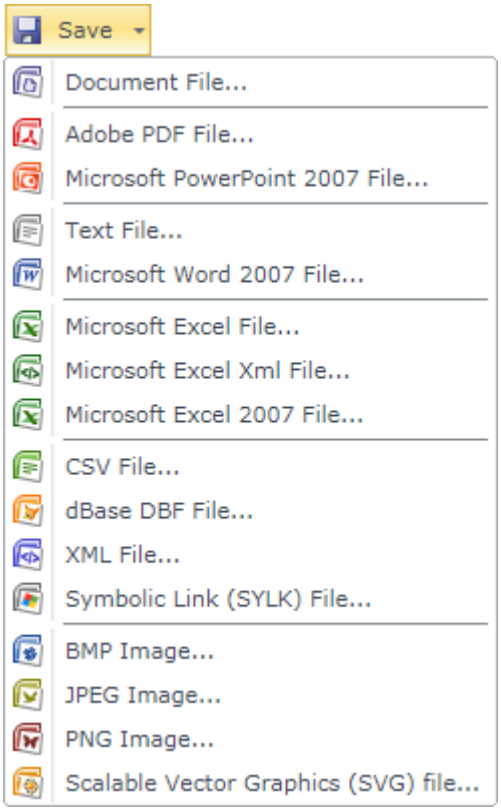


By default, all available formats are listed for exporting.

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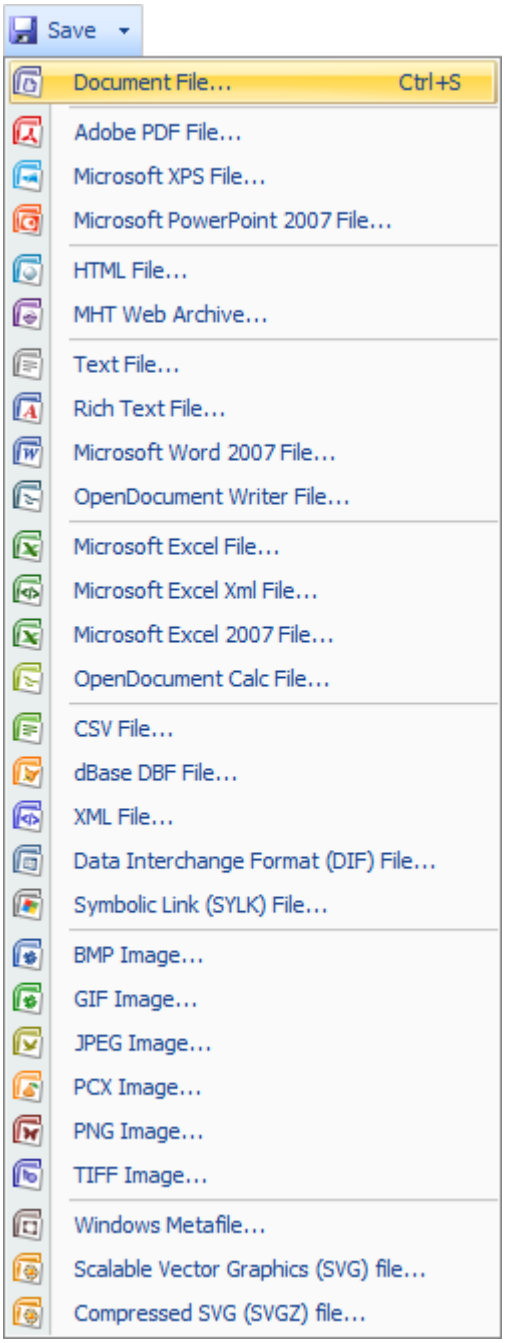
# Using Reports

# 12. Using Reports

## 12.1. Saving and Loading Rendered Reports




In order to keep creating report for further loading and editing you must select the Document File format. When choosing this format the Save... window will be called where you need to specify the

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path to save the document, File Name, File Type. There are three types of files that can be saved to keep the report for later download. These are *. mdc, *. mdz, *. mdx. Files of the *. mdc type are not packed and not encrypted standard documents. Files of the *. mdz type are packed, but not encrypted documents. Files of the *. mdx type are packed and encrypted documents. When saving a report built in file type *. mdz the report generator saves the report in paper and packs (compresses) it. When you save the built in the file type *. mdx the report generator saves the report in paper packs, and it opens the Password window, in which you need to specify a password for the packed document.

Any saved report is available for opening in the viewer. Click the Open button in the Viewer, which will cause opening the Open window. In this window, select the file type: *. mdc, *. mdz, *. mdx. Since the *. mdc file type is a standard document (not packed and not encrypted), the report generator simply loads it in the viewer. When opening an *. mdz file type, since this type is compressed, the report generator will extract it first, and then load it in the report viewer. If the file type is *. mdx, i.e. is packed and encrypted, then when you open this file type, the Password window will be called, where you need to specify a password to decrypt the report. If the password is correct, then the report will be decrypted, decompressed and loaded in the viewer. If a password is not correct, then the report generator notifies the user in an error message.

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# Part XII

# Exports

# 13. Exports

This section describes principles of saving rendered reports to different formats, basic characteristics of methods for export, export optimization guidelines data structure which are used in export methods. Stimulsoft Reports supports great many export formats to save rendered reports. Many clients think that there are too many formats. But when you need to get file of definite format type, write only one string of code and the format is not PDF, HTML or RTF, only Stimulsoft Reports may help. We do not think that too many export formats in our report generator is disadvantage and continually work on adding new formats. As they say the more exports the better.

## 13.1. Available File Formats

A list of supported file formats is represented in the table below. All exports are joined into groups.

| Export Name |
|---|
| **PDF** (Portable Document Format) |
| **XPS** (XML Paper Specification) |
| **HTML** (HyperText Markup Language) |
| **MHTML** (MIME HTML) |
| Text file (**TXT**) |
| Rich Text (**RTF**) |
| Microsoft Word 2007 |
| Open Document Text (**ODT**) |
| **Microsoft Excel** |
| **Microsoft Excel Xml** |
| **Microsoft Excel 2007** |
| Open Document Spreadsheet (**ODS**) |
| **CSV** (Comma Separated Values) |
| **DBF** (DataBase File) |
| **XML** (eXtensible Markup Language) |
| **DIF** (Data Interchange Format) |
| **SYLK** (Symbolic Link) |
| **BMP** (bitmap) |
| **GIF** (Graphics Interchange Format) |

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| |
|---|
| **PNG** (portable network graphics) |
| **TIFF** (Tagged Image File Format) |
| **JPEG** (Joint Photographic Experts Group) |
| **PCX** |
| **WMF** (Windows MetaFile) |
| **SVG** (Scalable Vector Graphics) |

## 13.2. Export Reports From Code

Stimulsoft Reports offers many ways of exporting rendered reports to other formats. Each method of export to other format has several settings. For exporting rendered reports Stimulsoft Reports uses a system of services. This means that all objects which are used in export are represented in the collection of services and when it is necessary to export a report, the report generator searches the appropriate service in the collection of services. There are two ways of exporting rendered formats to other formats from code: using the **ExportDocument** method of the **StiReport** class, and using direct creating or getting from a collection of services the required export service.

### 13.2.1. ExportDocument Method

The **ExportDocument** method is a simplified wrapping for report exports. There is no need to get the required export service. All you need is to define the export type, pass parameters of export and define the folder where the file should be saved. For example:

```
StiPdfExportSettings pdfSettings = new StiPdfExportSettings();
report.ExportDocument(StiExportFormat.Pdf, "MyReport.Pdf", pdfSettings);
```

The following code id used to export reports to PDF. The PDF file will be placed in the MyReport.Pdf. The export parameters can be passed using the **StiPdfExportSettings** object type. This class is described in the description of the PDF format. If there is no need to change export parameters then it is possible to use the short code line:

```
report.ExportDocument(StiExportFormat.Pdf, "MyReport.Pdf");
```

In this case the export parameters are not passed and the report generator will use parameters which are set by default for each export. Besides, the result of export can be placed in the stream.

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For example:

```
MemoryStream stream = new MemoryStream();
report.ExportDocument(StiExportFormat.Pdf, stream);
```

**Notice!** The **ExportDocument** method does not call the **Render** method automatically. Before calling the **ExportDocument** method it is necessary to render a report or load a previously rendered report.

As you can see, no services in examples were not created and samples contain simple code. All work by creating services and checking parameters can be done using the **ExportDocument** method.

The code above requires connection the following namespaces from assemblies Stimulsoft.Reports.dll:

```
Stimulsoft.Report
```

## 13.2.2. Export Formats

The **StiExportFormat** enumeration describes export formats. Brief information of exports is represented below.

### Formats which are used for representing documents and allows for easy viewing and printing:

- **PDF** - export to Adobe PDF.
- **XPS** - export to Microsoft XPS.

### Web formats:

- **Html** - export to Html by default. This element duplicates the HtmlTable mode.
- **HtmlTable** - export to Html using the Html Table element, to create a report structure.
- **HtmlSpan** - export to Html using the Html Span element, to create a report structure.
- **HtmlDiv** - export to Html using the Html Div element, to create a report structure.
- **Mht** - export to WebArchive. This format is supported only in Microsoft IE.

### Text formats:

- **Text** - export to Text.
- **Rtf** - export to Rich Text Format by default. This element duplicates the HtmlTable mode.
- **RtfTable** - export to Rich Text Format using the Rtf Table element, to create a report structure.
- **RtfFrame** - export to Rich Text Format using the Rtf Frame element, to create a report structure.
- **RtfWinWord** - export to Rich Text Format using the Microsoft Word graphic element, to create a report structure.
- **RtfTabbedText** - export to Rich Text Format using the symbols of tabulation, to create a report structure.

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- **Word2007** -export to Microsoft Word 2007. This format is supported starting with Microsoft Office 2007.
- **Odt** - export to the OpenDocument Writer file.

### Spreadsheets:

- **Excel** - export to Microsoft Excel. The file is created using the BIFF (Binary Interchange File Format).
- **ExcelXml** - export to Microsoft Excel Xml. The file is created using the Xml. This format is supported starting with Microsoft Office 2003.
- **Excel2007** - export to Microsoft Excel 2007. This format is supported starting with Microsoft Office 2007.
- **Ods** - export to OpenDocument Calc file.

### Export as data:

- **Csv** - export to CSV (Comma Separated Value).
- **Dbf** - export to dBase/FoxPro.
- **Xml** - export to Xml as data. This format is a saved DataSet.
- **Dif** - export to **DIF** (Data Interchange Format).
- **Sylk** - export to **SYLK** (Symbolic Link).

### Export as image:

- **ImageGif** - export to GIF.
- **ImageBmp** - export to BMP.
- **ImagePcx** - export to PCX.
- **ImagePng** - export to PNG.
- **ImageTiff** - export to TIFF.
- **ImageJpeg** - export to JPEG.
- **ImageEmf** - export to Windows Metafile.

## 13.2.3. Export Service

The way to create the export service is shown below. See the code:

```
StiPdfExportService service = new StiPdfExportService();
StiPdfExportSettings settings = new StiPdfExportSettings();
MemoryStream stream = new MemoryStream();
service.ExportPdf(report, stream, settings);
```

If you exported from the WinForms Viewer, then you should notice, than for each export the special form for setting parameters of export is shown. This form can be called from the code. The code below how to do it for the export to the PDF:

```
service.Export(report, "MyReport.pdf");
```

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This code will call the dialog form for setting parameters of export. If a user clicks "OK", then the file will be created. If to click the "Cancel" button, then the file creation will be interrupted.

Notice! The name of the method for the report export with dialog forms differs from the name of the export method without parameters.

The export service of a report contains yet another ability. The report can be sent via e-mail. For example:

```
bool sendEMail = true;
service.Export(report, "MyReport.pdf", sendEMail);
```

This code will call the dialog form for setting parameters of reports, and if a user clicks "OK", then the reporting tool will call the Email client and will create a new e-mail letter, the exported report will be attached to the e-mail letter.

The code above requires connection of the following names from the Stimulsoft.Report.dll assemblies:

```
Stimulsoft.Report
Stimulsoft.Report.Export
```

## 13.2.4. All Export Services

The **StiExportFormat** enumeration describes export formats. Brief information of exports is represented below.

**Export services to Adobe PDF and Microsoft XPS:**
- StiPdfExportService
- StiXpsExportService

**Export services to HTML and MHT:**
- StiHtmlExportService
- StiMhtExportService

**Export services to Microsoft Excel and Open Document Calc:**
- StiExcelXmlExportService
- StiExcelExportService
- StiExcel2007ExportService
- StiOdsExportService

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**Export services to text formats:**
- StiTxtExportService
- StiRtfExportService
- StiWord2007ExportService
- StiOdtExportService

**Export services to data:**
- StiCsvExportService
- StiDbfExportService
- StiXmlExportService
- StiDifExportService
- StiSylkExportService

**Export services to graphic formats:**
- StiBmpExportService
- StiGifExportService
- StiJpegExportService
- StiPcxExportService
- StiPngExportService
- StiTiffExportService
- StiEmfExportService

## 13.3. Common Export Settings

These chapters describe export settings which are not unique and are met in a few exports. Therefore, to prevent describing them again and again, they are joined in this section.

### 13.3.1. Image Quality

Image quality is the compression degree of JPEG. If the compression is low then an image is of good quality and has big file size. If the compression is high then an image is of bad quality and has small file size. In Stimulsoft Reports an image quality can vary from 0.0 (the lowest quality) to 1.0 (highest quality). If an image quality is 1.0 it does not mean that the image is saved without compression. The JPEG algorithm always compresses an image. The 1.0 quality means that an image quality will be the same as the quality of an original document but the file size will be smaller than the original. The 0.0 quality means that the image has slightest similarity to the original document. In practice, the 0.9 quality has not great distinction from the 1.0 quality but the image with lower than the 0.1 quality looks bad. By default, in Stimulsoft Reports the image quality is 0.75.

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## 13.3.2. Image Resolution

Raster images such as scanned photos consist of small cells called pixels. Image resolution depends on the pixel size and is measured in pixels per inch, ppi, and sometimes in dots per inch, dpi. The higher resolution the more pixels the image contains and, accordingly, the more size of the image. In Stimulsoft Reports it is possible to set any image resolution. But when increasing the resolution in 2 times the image size will increase in 4 times. Also it is not good to set the image resolution more than maximal resolution of an output device. For example, devices may have the following resolution:

- matrix printer - 72dpi
- monitor screen - 96dpi
- laser printers - 300dpi or 600dpi
- high-end printers - 1200dpi and higher.

By default the resolution is 100dpi.

## 13.3.3. Image Comparer

Sometimes repetitive image can be met in a report, for example, company logos on the header of each page. If do not process such duplicates then a report after export will have big size. Some formats allows exporting only one image and then refer to it from different parts of a document. In Stimulsoft Reports, there is a special class that calculates check sums and searches and processes duplicates. Image processing may slow down the process of exporting, so it is possible to disable this feature. Each export has its own property to enable or disable image comparison. By default this property is always enabled.

## 13.3.4. Convert Digits to Arabic

Arabs do not use Arabic digits. They use Hindi digits and Arabic digits are auxiliary (the same as Roman digits for us). But, in any case, all digits are written from left to right. This property indicates whether it is necessary to convert Roman digits (ASCII 0030h-0039h) to Arabic digits (Unicode 0660h-0669h or 06F0h-06F9h, depending on the ArabicDigitsType property). In each types of export the digits conversion can be set by their own property.

## 13.3.5. Arabic Digits Type

Arabic digits have two variants of drawing: Standard and Eastern. The property allows selecting the type of Arabic digits that will be used in export: Standard or Eastern; by default the Standard type is used. In each export the type of Arabic digits is enabled or disabled by its own property.

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### 13.3.6. Divide Segment Pages

Stimulsoft Reports allows creating segmented pages. These are pages which horizontal and/or vertical size are increased in some times. Some applications, such as MS Excel, allows working with pages of any size, because breaking into small segments can is processed with the spreadsheet itself. Other applications, such as MS Word, cannot break pages into small segments. For such applications segmented pages are broken into separate pages on the stage of selected export; if this property is set to **false** then pages are passed "as is" without breaking into segments. Each type of export has its own property for breaking segmented pages.

### 13.3.7. Remove Empty Space at Bottom

Many exports uses the table mode of export. In this mode data is converted into one table. If, in the initial report, there is an empty space on the bottom of a page then the table is broken. The following property allows removing empty space at the bottom of a page and resulting table is not broken. If it is necessary to save the initial view of a document then it is necessary to set this property to **false**. In each type of exports their own property is used.

### 13.3.8. Use One Page Header and Footer

When exporting to Excel then all report is converted in one table. Headers and footers of a page break this table. This property leaves only the first header and the last header of a page. All other headers and footers are removed. If it is necessary to save the initial view of a document then it is necessary to set this property to **false**. For each type of exports their own property is used.

## 13.4. Formats with Fixed Page Layout

Stimulsoft Reports supports two exports with fixed page layout. What is the fixed page layout? This means that all elements of a page can be placed at any part of a page. In this case, if to change a position of one element then other components position will not be changed. These are formats to **PDF** (Portable Document Format) and **XPS** (XML Paper Specification).

### 13.4.1. PDF

**PDF** (Portable Document Format) – is a file format created by Adobe Systems for document exchange used to create electronic editions using the Adobe Acrobat package. The PDF format is a file text format that is used to publish documents on any platform and OS. The PDF document

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contains one or more pages. Each page may contain any components: text, graphic and illustrations, information, that provides navigation across the document.

Export to PDF is based on the "Adobe Portable Document Format, Version 1.3, second edition", using some elements of latest format specifications.

### 13.4.1.1. Embedded Fonts

By default all embedded fonts are optimized. Characters which are not used in a report are excluded. It allows decreasing the size of a file. But, for correct work of the editable field, the font should be complete. Therefore, for fonts, which are used in editable fields, optimization is not done. This increases the output file size. If Asian languages are used, the file size can be 15-20mb.

If by some reasons the font optimization is not working correct it can be forcibly disabled using the static property:

```
StiOptions.Export.Pdf.ReduceFontFileSize = false;
```

#### 13.4.1.1.1 Font Styles.

There is one peculiarity of the export: all fonts for embedding to PDF files should be installed in the system. And for each font style a single font file should be installed.

For example, for the Arial font 4 files should be installed:
- "arial.ttf" - the regular style,
- "ariali.ttf" - the italic style,
- "arialb.ttf" - the bold style,
- "arialbi.ttf" - the bold-italic style;

This font is embedded correctly and all styles of this font can be output.

The Lucida Console font is usually represented with one file that contains the regular style (other styles are generated by the system). Therefore, when embedding such a font to the PDF file, only **regular** style will be output, instead of all styles of this font.

### 13.4.1.2. Digital Signature

**Digital signature** is a requisite of an electronic document used to protect this document from falsification. This document is a result of cryptographic conversion of information using the **closed key** of the electronic signature and allows identifying the owner of the certificate of the key of the signature. Digital signatures are often used to implement electronic signatures

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#### 13.4.1.2.1 Keys.

Key is secret information is the secret information that is used by the cryptographic algorithm when creating and checking the digital signature. Usually for digital signature the pair of keys is used:

- Public key this key is known only for the owner;
- Public key this key is available for all users of cryptographic system.

In Digital Signature algorithms the signature is signed on the secret key of a user and is checked on the public key. So anyone may check what user put this signature.

Keys are bound with specific certificates.

#### 13.4.1.2.2 Public Key Certificate.

Public key certificate is an electronic document which utilizes a digital signature to bind together a public key with an identity — information such as the name of a person or an organization, their address, and so forth. The certificate can be used to verify that a public key belongs to an individual.

#### 13.4.1.2.3 Choosing Certificate.

There are two ways to create the digital signature:

- using the interface of the system library of cryptograph;
- directly by specifying the string - certificate identifier.

In the first case it is necessary to set the **Get Certificate From CryptoUI** property to **true**. When exporting, the menu for selecting certificate from the current storage of certificates will be displayed. It is necessary to select one certificate from the list of available ones.

**Important!** In web applications this way cannot be used, because the menu of selecting a certificate is displayed on a computer on what the export is in process, in other words on the server. So the user cannot see and cannot do anything with it. In other words the export endlessly waits when the certificate will be selected.

In the second way, it is necessary to use the **SubjectNameString** property and write in it the string - certificate identifier. Identifier is the name of the certificate owner (full string) or a part of the name (substring).

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#### 13.4.1.2.4 Placing Digital Signature Identifier.

By default the digital signature identifier is placed on the top of the first page of a document in the right corner, on margins. If it is required to set another position of the digital signature identifier, then it is necessary to place the text box with the description of the digital signature, and to set the **Tag** property to "**PdfDigitalSignature**".

#### 13.4.1.2.5 Digital Signature from Code.

The **StiPdfExportSettings** class is used to control digital signature. It has the following properties:

```
public bool UseDigitalSignature
public bool UseLocalMachineCertificates
public bool GetCertificateFromCryptoUI
public string SubjectNameString
```

By default:

```
UseDigitalSignature             = false;
UseLocalMachineCertificates     = true;
GetCertificateFromCryptoUI      = true;
SubjectNameString               = string.Empty;
```

A sample how to use these properties is shown below:

```
StiReport report = new StiReport();
report.Load("c:\\test.mrt");
report.Render(false);

StiPdfExportSettings settings = new StiPdfExportSettings();
settings.UseDigitalSignature        = true;
settings.GetCertificateFromCryptoUI  = false;
settings.UseLocalMachineCertificates = true;
settings.SubjectNameString          = "John Smith <johns@google.com>";

report.ExportDocument(StiExportFormat.Pdf, "c:\\test.pdf", settings);
```

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### 13.4.1.3. Encryption

A PDF document can be encoded to protect the content from unauthorized access. A user may set the following parameters of encryption:

- User password;
- Owner password;
- Access permission;
- Key length.

#### 13.4.1.3.1 Passwords and Access Permission.

According to the PDF specification, it is possible to set the access and two passwords: the public password and the owner's password.
If there are no passwords and everything is allowed to do with the document, then the document is not encrypted. If even one password is set or access is not allowed, then the document is encrypted.

The public password allows opening and viewing documents, and also some actions are allowed:

- edit document;
- copy text and graphics from the document;
- add and change commentaries;
- print document.

The owner password provides access to the document, including password changing and access permission.

If the owner's password is set, and the public password is not set, then, when opening a document, the password is not asked.

#### 13.4.1.3.2 Key Length.

The PDF Reference defines both 40-bit and 128-bit encryption. By default 40-bit key is used.
128-bit key is more secure the 40-bit key. But is some countries the key length of encryption is limited.

English: Quote from PDF Reference:
"A PDF document can be encrypted to protect its contents from unauthorized access. The encryption of data in a PDF file is based on the use of an encryption key computed by the security handler. Different security handlers can compute the key in a variety of ways, more or less cryptographically secure. In particular, PDF's standard encryption handler limits the key to 5 bytes (40 bits) in length, in accordance with U.S. cryptographic export requirements in effect at the time of initial publication of the PDF 1.3 specification."

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#### 13.4.1.3.3 Using Parameters of Encryption from Code.

Using the **StiPdfExportSettings** class it is possible to set the encryption parameters from code. The following properties of this class are used:

```
public string PasswordInputUser
public string PasswordInputOwner
public StiUserAccessPrivileges UserAccessPrivileges
public StiPdfEncryptionKeyLength KeyLength
```

The **StiUserAccessPrivileges** enumeration contains the following elements (flags):

- None,
- PrintDocument,
- ModifyContents,
- CopyTextAndGraphics,
- AddOrModifyTextAnnotations,
- All

The **StiPdfEncryptionKeyLength** enumeration contains the following elements:

- Bit40,
- Bit128

By default the values set as follow:

```
PasswordInputUser       = string.Empty;
PasswordInputOwner      = string.Empty;
UserAccessPrivileges    = StiUserAccessPrivileges.All;
KeyLength                       = StiPdfEncryptionKeyLength.Bit40;
```

An example of using:

```
StiReport report = new StiReport();
report.Load("c:\\test.mrt");
report.Render(false);

StiPdfExportSettings settings = new StiPdfExportSettings();
settings.PasswordInputUser      = "user";
settings.PasswordInputOwner     = "owner";
settings.UserAccessPrivileges = StiUserAccessPrivileges.PrintDocument;
settings.KeyLength              = StiPdfEncryptionKeyLength.Bit128;

report.ExportDocument(StiExportFormat.Pdf, "c:\\test.pdf", settings);
```

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### 13.4.1.4. Editable Fields

To enable the export of editable fields it is necessary to set the static property

```
StiOptions.Export.Pdf.AllowEditablePdf = true;
```

Editable fields in the PDF-file has two conditions:

- **First** – a condition before editing, it is shown when opening the file. This condition corresponds to the type of a text box in the preview.
- **Second** - the type in the mode of field editing, and after editing. In this condition it is impossible to set the vertical alignment of the text (always Top) and some parameters of a font. Therefore, after editing a field, even if the contents is not changed, the type of this field can be change.

If it is necessary to have the **MultiLine** editable field, then it is necessary to set the **WordWrap** property of the text box to **true**.

### 13.4.1.5. Compatibility of Different Versions

The information below shows the compatibility of Adobe Acrobat versions.

**Adobe Acrobat 5:**

- the PageScaling option from the file is ignored. By default the option in parameters of Adobe Acrobat is set to "None" but "Fit to printable area" value is used.

**Adobe Acrobat 5 & 6:**

- when editing Adobe Acrobat does not recognize the Unicode - only Latin characters are output (Latin-1 encoding), other characters are output as dots;
- if the "**UseUnicode**" option in export parameters is enabled, then it is necessary to embed fonts (the "**Embedded Fonts**" option), otherwise the will be output incorrectly.

**Adobe Acrobat 7:**

- it is necessary to embed fonts to the PDF file. Otherwise, when editing, any font will be replaced on the default font (usually on Tahoma).

**Adobe Acrobat 7 Reader:**

- there are some problems with 7.0.5 - 7.0.9 versions. In these versions the field is not included into the editing mode, if there are non Latin characters present in the text field (different from Latin-1).

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### 13.4.1.6. Export Settings

The export parameters of the PDF export are described in the **StiPdfExportSettings** class. The description of all class properties are in the table below.

| Name | Type | Description |
|---|---|---|
| ImageQuality | float | image quality; may have values from 0.0 (the lowest quality) to 1.0 (the highest quality); by default 0.75 |
| ImageResolution | float | image resolution dpi; can take any value, by default 100 |
| EmbeddedFonts | bool | embed font files into the PDF file; is true then all fonts are embedded into the file and this file will have the same look on any computer (there is no need to embed additional fonts); if false then fonts are not embedded; by default true |
| StandardPdfFonts | bool | use standard fonts which are embedded in Adobe Acrobat Reader and there is no need to embed them into the file; all fonts are changed on standard fonts (Courier, Helvetica, Times-Roman); by default false |
| Compressed | bool | compress the PDF file; decreases the file size by compressing the text information (images are always compressed); by default true |
| UseUnicode | bool | writes a text in the Unicode; if false then 190 symbols can be written, and a lot of problems with native language symbols may occur; if true then any symbols can be used; by default true |
| ExportRtfTextAsImage | bool | export RichText objects as images; if false then export tries to convert RichText objects into PDF primitives; if true the RichText is written as an image; by default false |
| PasswordInputUser | string | user password (see Encryption); by default empty string |
| PasswordInputOwner | string | owner password (see Encryption); by default empty string |
| UserAccessPrivileges | enum | user access privileges (see Encryption); by default StiUserAccessPrivileges.All |
| KeyLength | enum | key length (see Encryption); by default StiPdfEncryptionKeyLength.Bit40 |
| UseDigitalSignature | bool | use digital signature of a document; by default false |
| GetCertificateFromCryptoUI | bool | get the certificate from the Crypto interface; if false then a certificate is searched by certificate identifier without using the interface; by default true |
| SubjectNameString | string | certificate identifier; this is a certificate name (empty string) or a part of a name (substring); by default empty string |
| UseLocalMachineCertificates | bool | search certificates on the local machine; if false then certificate is searched in the store of the current user; by default false |

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| | | |
|---|---|---|
| CreatorString | string | the "Creator" field in the document description (application name that created the original file); if it is not set (empty string) then the StiOptions.Export.Pdf static property is used. CreatorString; by default empty string |
| KeywordsString | string | the "Keywords" field in the document description (application name that created the original file); if it is not set (empty string) then the StiOptions.Export.Pdf.KeywordsString static property is used; by default empty string |
| ImageCompressionMethod | enum | image compression method - JPEG (with quality loss) or Flate (without quality loss); by default StiPdfImageCompressionMethod.Jpeg |

If the **UseUnicode** is used then, for Acrobat Reader 5.0, it is necessary to use the **Embedded fonts = true**.
If the **UseUnicode + encoding** is used, then it is necessary to use the **Embedded fonts = true**.

The following should be done to compress file:
- enable **Compressed**;
- disable **Embedded fonts**;
- if **Embedded fonts** is required then enable the **ReduceFontFileSize.**

### 13.4.1.7. Static Options

Except the **StiPdfExportSettings** class, parameters of export to PDF are also set using the static properties. All properties are described in the table below. To access to export properties it is necessary to add the **StiOptions.Export.Pdf...** prefix. For example, **StiOptions.Export.Pdf.DivideSegmentPages**.

| Name | Type | Description |
|---|---|---|
| DivideSegmentPages | bool | divide segmented pages into separate pages; if false then are exported "as is" without dividing; by default true |
| ConvertDigitsToArabic | bool | convert ASCII digits Arabic; by default false |
| ArabicDigitsType | enum | Select Arabic digits type; by default Standard |
| ReduceFontFileSize | bool | optimize embedded fonts - eliminate symbols which are not met in a report; if false then fonts are not changed; by default true |
| AllowEditablePdf | bool | export editable fonts as editable PDF objects (in this case fonts which are used in editable fields are not optimized); if false then editable fields are exported as simple text; by default false |
| AllowImageComparer | bool | use the image comparer, e.g. replace image duplicates (see Common export settings); if false then an image is exported |

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| Name | Type | Description |
|---|---|---|
| | | "as is"; by default true |
| AllowImageTransparency | bool | use transparency in export images; by default true |
| AllowInheritedPageResources | bool | store resources of pages in the parent dictionary and inherit from it; if false then resources of pages are specified in each page; this property is critical for some programs of PDF files processing; by default true |
| AllowExtGState | bool | use command to control transparency when creating a document; if false then commands are not used; this property is critical for some programs of PDF files processing; by default true |
| CreatorString | string | the "Creator" field in document description (application name, which created the original document); by default the "Stimulsoft Reports.Net" string |
| KeywordsString | string | the "Keywords" field in document description (keywords); by default empty string |

## 13.4.2. XPS

**XPS** (XML Paper Specification) is the open graphic format of fixed page layout on the base XML (more precisely XAML-based) used to store printed output as electronic documents. This format was developed by Microsoft as alternative to the PDF format.

The XPS document format consists of structured XML markup that defines the layout of a document and the visual appearance of each page, along with rendering rules for distributing, archiving, rendering, processing and printing the documents. The markup language for XPS is a subset of XAML that allows including vector graphic elements, using XAML to mark up the WPF-primitives.

The XPS is a ZIP-archive that contains the files which make up the document. The archive includes page mark up (one file per each page of a document), text, embedded fonts, raster images, 2D vector graphics and other information.

### 13.4.2.1. Export Settings

The export parameters of the XPS export are described in the **StiXpsExportSettings** class. The description of all class properties are in the table below.

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| Name | Type | Description |
|---|---|---|
| ImageQuality | float | image quality; may have values from 0.0 (the lowest quality) to 1.0 (the highest quality); by default 0.75 |
| ImageResolution | float | image quality; may have values from 0.0 (the lowest quality) to 1.0 (the highest quality), by default 100 |

#### 13.4.2.2. Static Options

Besides the **StiXpsExportSettings** class, the parameters of export to XPS are also set using the static properties. All properties are described in the table below. To access to export properties it is necessary to add the **StiOptions.Export.Xps...** prefix. For example, **StiOptions.Export.Xps.ReduceFontFileSize**.

| Name | Type | Description |
|---|---|---|
| ReduceFontFileSize | bool | optimize embedded fonts - exclude symbols which are not met in a report; if false then fonts are not changed; by default true |
| AllowImageComparer | bool | use the image comparer, e.g. replace image duplicates (see Common export settings); if false then an image is exported "as is"; by default true |
| AllowImageTransparency | bool | use the transparency in exporting images; by default true |

### 13.4.3. Microsoft Power Point 2007

Microsoft PowerPoint is a presentation program developed by Microsoft. It is a part of the Microsoft Office suite. PowerPoint presentations consist of a number of individual pages or "slides". Slides may contain text, graphics, movies, and other objects, which may be arranged on the slide. The presentation can be printed, displayed on a PC, or navigated through at the command of the presenter. In Stimulsoft Reports each report page corresponds to one slide.

#### 13.4.3.1. Export Settings

The export parameters of the PPT export are described in the **StiPpt2007ExportSettings** class. The description of all class properties are in the table below.

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| Name | Type | Description |
|---|---|---|
| ImageQuality | float | image quality; may have values from 0.0 (the lowest quality) to 1.0 (the highest quality); by default 0.75 |
| ImageResolution | float | image quality; may have values from 0.0 (the lowest quality) to 1.0 (the highest quality), by default 100 |

#### 13.4.3.2. Static Options

Besides the **StiPpt2007ExportSettings** class, the parameters of the export to PPT are also set using the static properties. All properties are described in the table below. To access to export properties it is necessary to add the **StiOptions.Export.Ppt2007...** prefix. For example, **StiOptions.Export.Ppt2007.ReduceFontFileSize**.

| Name | Type | Description |
|---|---|---|
| AllowImageComparer | bool | use the image comparer, e.g. replace image duplicates (see Common export settings); if false then an image is exported "as is"; by default true |

## 13.5. Web Documents

There are two two formats **HTML** (HyperText Markup Language) and **MHTML** (MIME HTML) are described in this chapter. The first format is used for web page layout. The second format is a web page archive format used to bind resources together with HTML code into a single file.

### 13.5.1. HTML

**HTML** (HyperText Markup Language) is the predominant markup language for Web pages. The majority of web pages are created using the HTML language. The HTML language is interpreted by browser and shown as a document. HTML is a tag language of the document layout. It provides a means to describe the structure of text-based information in a document—by denoting certain text as links, headings, paragraphs, lists, etc. Elements are the basic structure for HTML markup. Elements have two basic properties: attributes and content. Each attribute and each element's content has certain restrictions that must be followed for a HTML document to be considered valid. An element usually has a start tag (e.g. <element-name>) and an end tag (e.g. </element-name>).

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### 13.5.1.1. Export Modes

There are three mode of export to HTML:

- **Div** - in this mode all objects of a report are converted to the **div** block element; the report is converted precisely, except for vertical text alignment;
- **Span** is the same as the Div mode but the span element is used;
- **Table** - in this mode all objects of a report are converted to the **table** block element; in this mode the vertical text alignment is correct but, if the WordWrap is disabled then the problem may occur with long lines of text.

### 13.5.1.2. Export Images in HTML Format

Also it is possible to specify how to export images of a document. Images with transparency can be saved to the PNG format. It is important to remember that some browsers (foe example Internet Explorer 6) do not support images with transparency.

### 13.5.1.3. Compatibility of Different Versions

The following minimal web-browsers versions are required for correct HTML export:

- Internet Explorer 6.0 and higher;
- FireFox 1.5 and higher;
- Opera 7.5 and higher.

### 13.5.1.4. Export Settings

The export parameters of the HTML export are described in the **StiHtmlExportSettings** class. The description of all class properties are in the table below.

| Name | Type | Description |
|---|---|---|
| Zoom | double | zoom coefficient; by default 1.0 |
| ImageFormat | ImageFormat | sets an image export format; by default ImageFormat.Png |
| ExportMode | StiHtmlExportMode | sets the mode of the document export using the div, span or table elements; by default StiHtmlExportMode. Table |

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| Name | Type | Description |
|---|---|---|
| ExportQuality | StiHtmlExportQuality | export quality of components size; by default StiHtmlExportQuality.High |
| Encoding | Encoding | file encoding; by default Encoding.UTF8 |
| AddPageBreaks | bool | add page breaks; by default false |
| BookmarksTreeWidth | int | bookmark column width, in pixels; by default 150 |
| ExportBookmarksMode | StiHtmlExportBookmarksMode | a mode the export a document with bookmarks; by default StiHtmlExportBookmarksMode.All |
| UseStylesTable | bool | use the Styles table; if false then the style table is empty and all properties of each component will described directly in the style of this component; by default true |

### 13.5.1.5. Static Options

Except the **StiHtmlExportSettings** class parameters of export to HTML are set using the static properties. All properties are described in the table below. To access to export properties it is necessary to add the **StiOptions.Export.Html...** prefix. For example, **StiOptions.Export.Html.ConvertDigitsToArabic**.

| Name | Type | Description |
|---|---|---|
| ConvertDigitsToArabic | bool | convert ASCII digits to Arabic digits; by default false |
| ArabicDigitsType | enum | select Arabic digits type; by default Standard |
| AllowImageComparer | bool | use the image comparer, e.g. replace image duplicates (see Common export settings); if false then an image is exported "as is"; by default true |
| ForceWysiwygWordwrap | bool | Forcibly break text in rows as well as in the WYSIWYG mode; by default - false |
| ReplaceSpecialCharacters | bool | change symbols '<', '>', '&', ' " ' on < > & " by default true |

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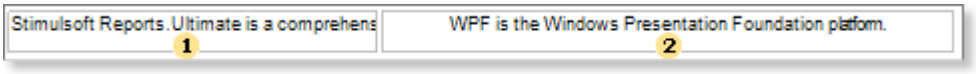
### 13.5.1.6. Exporting Text Components

When exporting reports to the **HTML** format, it is necessary to take the following features of this format into consideration:

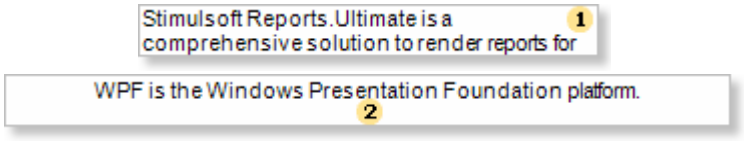
- if a text does not fit a table cell horizontally, then a browser automatically carries a text to the next page;
- if a text does not fit a table cell vertically, then a browser automatically increases height of a table cell.

Such a behavior of a text can be obtained in the **Net** and **WPF** viewers (**Win**-viewers) by setting **WordWrap** and **CanGrow** properties of a text component to **true**. In the **HTML** format (and in the **Web** viewer correspondingly), no matter what is the value of these two properties, the text component will be shown the same way. For example, put 2 text components on a report template. Insert long text to the first component and a short one to the second. Set **WordWrap** and **CanGrow** properties to **false**. The picture below shows a report template:




After rendering a report in the **Win**-viewer, a report will look like on a picture below:

As seen on the picture, a text in the first text component did not fit and was cut, in the second text component the text fits a text component and shown without changes. Now set the **WordWrap** property to **true** for both components. After rendering, a report will look in the **Win** viewer like on the picture below:




As seen on the picture, a text in the first text component is wrapped to the second row. But the component is not grown by height, so the text does not fit this component and was cut. In the second component the text fit this component and shown without changes. In both ways the text in the **HTML** format in the **Web** will look the following way:

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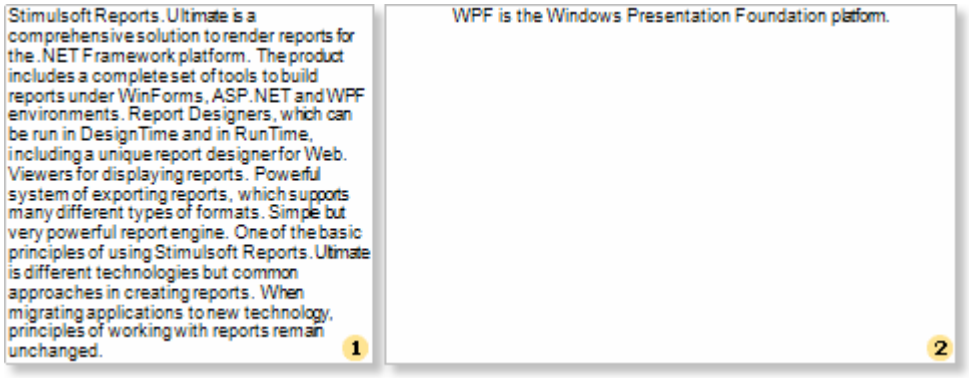
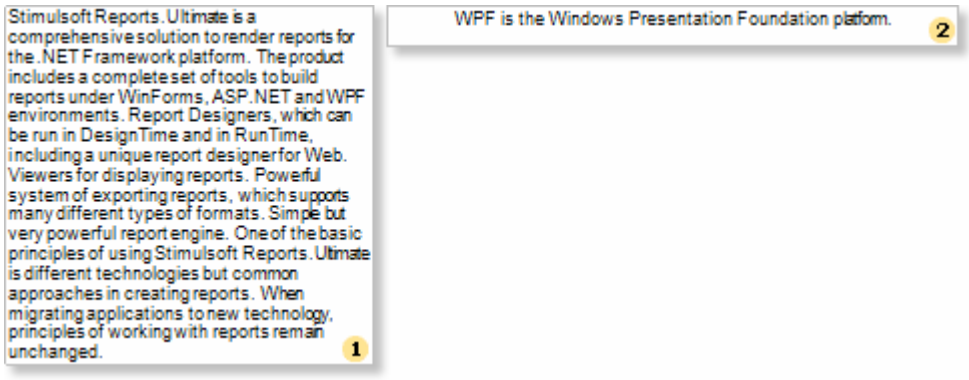



If to set the **Can Grow** properties of these texts components to **true**, then the report will look the same in the **Win** viewer and **Web** viewer:




## 13.5.2. MHT

**MHTML** (MIME HTML) is a web page archive format used to bind resources which are typically represented by external links (such as images, Flash animations, Java applets, audio files) together with HTML code into a single file. This file is a web archive and has the «**.mht**» extension. The content of a file is written as an e-mail message using the MIME standard: in the beginning of a file the HTML file is written. Then all resources in the base64 encoding with headers are written. Internet Explorer, Opera, Microsoft Word can work with the MHTML format.

### 13.5.2.1. Export Settings

The export parameters of the MHT export are described in the **StiMhtExportSettings** class. The description of all class properties are in the table below.

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| Name | Type | Description |
|---|---|---|
| Zoom | double | zoom coefficient; by default 1.0 |
| ImageFormat | ImageFormat | sets an image export format; by default ImageFormat.Png |
| ExportMode | StiHtmlExportMode | sets the mode of the document export using the div, span or table elements; by default StiHtmlExportMode.Table |
| ExportQuality | StiHtmlExportQuality | export quality of components size; by default StiHtmlExportQuality.High |
| Encoding | Encoding | file encoding; by default Encoding. UTF8 |
| AddPageBreaks | bool | add page breaks; by default false |
| BookmarksTreeWidth | int | bookmark column width, in pixels; by default 150 |
| ExportBookmarksMode | StiHtmlExportBookmarksMode | a mode the export a document with bookmarks; by default StiHtmlExportBookmarksMode.All |

## 13.6. Text Formats

This chapter describes exports formats of text files. In other words the files which are used to create text documents.

### 13.6.1. TXT

**Text file** (**TXT**) is a kind of computer file that is structured as a sequence of lines. A text file exists within a computer file system. The end of a text file is often denoted by placing one or more special characters, known as an end-of-file marker, after the last line in a text file.

Text files are commonly used for storage of information.

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### 13.6.1.1. Border Types

The border in the text mode can be drawn using simple symbols or using pseudographics. Using the **BorderType** property it is possible to choose the mode of border drawing. It may have the following modes:

- Simple - drawing a border using simple symbols such as "+", "-", and "|";
- UnicodeSingle - drawing a border using the symbols of pseudographics; symbols of solid border are used;
- UnicodeDouble - drawing a border using the symbols of pseudographics; symbols of double border are used.

### 13.6.1.2. Column Width

When exporting to the text format, all coordinates and sizes of objects are recalculated to get the text appearance the same as it is in a report. You can control the conversion, by changing the zoom coefficients of ZoomX and ZoomY. The width of the columns of the output text is proportional to the width of the initial report. If you want to change the column width, it is possible to use the following methods:

- change the width of a column: it is necessary to specify the column width in characters in the **Tag** text box, the width will be set only for those lines which contain this text box;
- column width can be set globally via the **ColumnWidths** static property; in this case, the width of the columns is indicated starting from the left column, through the separator (a semicolon), for example, "10, 12, 45, 10, 10, 5, 20, 50 "; zero width of columns is ignored.

### 13.6.1.3. New Export Modes

The old/new export mode is set using the **UseOldExportMode** property. The new mode is created on the base of the StiMatrix: if the wordwrap is enabled and a text cannot be placed in a cell then the cell height is increased automatically. By default the new mode is enabled.

### 13.6.1.4. Export Settings

The export parameters of the TXT export are described in the **StiTxtExportSettings** class. The description of all class properties are in the table below.

| Name | Type | Description |
|---|---|---|
| Encoding | Encoding | text file coding; by default Encoding.UTF8 |
| DrawBorder | bool | draw border lines; if false, then borders are not drawn; by default true |

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| Name | Type | Description |
|---|---|---|
| BorderType | StiTxtBorderType | a type of a border line; by default StiTxtBorderType. UnicodeSingle |
| KillSpaceLines | bool | remove all empty rows of a text; by default true |
| KillSpaceGraphLines | bool | remove all rows of a text which contains only blank spaces and symbols of the vertical border; by default true |
| PutFeedPageCode | bool | put feed page code after each page; by default true |
| CutLongLines | bool | cut too long lines of a text which cannot be placed in textboxes; by default true |
| ZoomX | float | zoom coefficient by X axis; by default 1.0 |
| ZoomY | float | zoom coefficient by Y axis; by default 1.0 |

### 13.6.1.5. Static Options

Static properties of export to TXT are shown on the table below. To access to export properties it is necessary to add the **StiOptions.Export.Txt...** prefix. For example, **StiOptions.Export.Txt.ColumnWidths**.

| Name | Type | Description |
|---|---|---|
| ColumnWidths | string | forcibly set the text column width (the list through the semicolon); if a row is empty then the column width is not changed; by default empty string |
| UseFullTextBoxWidth | bool | use all text box width for a text; in this case if the text is laid on a border, then the border is erased in this place; if false, then when drawing a text, one blank space on the right is always left for correct drawing borders; by default false |
| UseOldMode | bool | use the old mode of the text export; this property is left for keeping compatibility with old versions; by default false |
| UseFullVerticalBorder | bool | draw vertical border outside a cell. So a border will never be closed with a text; by default true |
| UseFullHorizontalBorder | bool | draw horizontal border outside a cell. So a border will never be closed with a text; by default true |
| CheckBoxTextForTrue | string | a text that shows the checkbox **true** status ; by default "+" |
| CheckBoxTextForFalse | string | a text that shows the check **false** status; by default "-" |

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## 13.6.2. RTF

Rich Text Format (**RTF**) is a free document file format developed by Microsoft for cross-platform document interchange. The first version of the RTF standard appeared in 1987. Since that time format specification was changed and added. RTF-documents are supported by many text editors.

### 13.6.2.1. Export Modes

The export to the **RTF** format has 2 basic modes:

- **Frames** - in this mode all objects of a report are converted to the **frame** rtf-objects; the report is converted precisely, but it is difficult to edit such a document.
- **Table** - in this mode all objects of a report are converted to the single table; when converting, objects can be changed, but this document can be easily edited, and, therefore, this mode is more frequently used and this mode is the default mode of this export.

Also there are 2 modes of operation, which are obsolete and retained for compatibility:

- **WinWord** - similar to Frames, but all the objects passed as "frame" objects of MS-Word.
- **TabbedText** - the same as the export the the Text format, the position of a text is set using blank spaces and tabulations.

#### 13.6.2.1.1 Table Modes.

In this mode the whole report is converted into a single table. When exporting the report is converted into a single table. The document is easily editable but some objects can be changed.

Depending on the value of the **Use Page Headers and Footers** property the report is exported as follow:

- value is set to **false** - the report is exported "as is" and will look the same as in preview;
- value is set to **true** - the report is additionally processed, all changes are described in the text below.

The list of document changes:

- PageHeaders and PageFooters are exported as MS-Word objects. So they are cut from the table and other bands are converted into a single page. It is very convenient because it is easy to correct the document, for example, to put or edit text in cells, change the cell size; all data are moved, and headers and footers of a page stay on their place. (**Notice**: the header and the footer are exported from the first page of a report, others are ignored; in addition the improvement was done: now the header is searched on the second page; if the property PrintOn of this header is set to ExceptFirstPage, then everything is exported correctly (using the RTF tags) - the header will not be output on the first page.
- If the Header of the PrintOnAllPages property is enabled, then it is exported as the table header, and is correctly output on each page.
- The height or rows in not exported (the "not set" mode; by default the "precise" mode is set).
- If the **Tag** field is not empty, then the content of the **Tag** field is exported. The **Text** field is not exported. The following expression can be used to change MS-Word commands:

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| | |
|---|---|
| #PageNumber# | The number of the current page (PAGE) |
| #TotalPageCount# | Total number of pages in the document (NUMPAGES) |
| #PageRef Bookmark# | The number of pages on what the bookmark is placed (PAGEREF) |

For example, the following expression can be written in the **Tag** field:

```
Page #PageNumber# of #TotalPageCount#
```

When exporting, #PageNumber# and #TotalPageCount# will be substituted on the "Page number" field and "Total Page" field. And they will be automatically changed.

The following string-commands can be written in the **Tag** field:

| | |
|---|---|
| rtfparagraph | The TextBox and RichTextBox content is output as simple text, in the table break; other text boxes will be ignored on this line |
| rtfnewpage | The page break is put before the text box |

Also it is possible to export a separate sheets of a template to separate sections of the document with the headers/footers. To do this, use the **ExcelSheet** property. in this case all pages of a report with the same value of the ExcelSheet property are combined in groups, then each group is exported as a separate section of the document with its headers/footers. By default, this property is not filled, and the report is exported as a single partition.

### 13.6.2.2. Bugs

MS-Word: if to set top and bottom margin of one of cells in the table row, the same margin will be set in all cells of the row. Therefore, if to set the top and bottom margins of the text box, then, after exporting, the same margin will be set for the row of the table and the text will be moved. In OpenOffice this works without problems.

### 13.6.2.3. Compatibility of Different Versions

The RTF format is based on the RTF specification version 1.4 from 9/1995. The RTF files can be opened in Microsoft Word starting with the 97 (Office 97) version. In Microsoft Word 95 the RTF will have the following limitation:

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- does not support vertical alignment in cells;
- does not some parameters of a page;
- some colors and not shown correctly.

### 13.6.2.4. Export Settings

The export parameters of the PTF export are described in the **StiRtfExportSettings** class. The description of all class properties are in the table below.

| Name | Type | Description |
|---|---|---|
| ImageQuality | float | image quality; may have values from 0.0 (the lowest quality) to 1.0 (the highest quality); by default 0.75 |
| ImageResolution | float | image quality; may have values from 0.0 (the lowest quality) to 1.0 (the highest quality), by default 100 |
| UsePageHeadersAndFooters | bool | process headers and footers of a page (see Table mode); by default false |
| ExportMode | enum | select export mode (see Common knowledge); by default StiRtfExportMode.Table |
| CodePage | int | this property is obsolete and is not used any longer, remained for compatibility with earlier versions |

### 13.6.2.5. Static Options

Except the **StiRtfExportSettings** class parameters of export to RTF can be set using the static properties. All properties are described in the table below. To access to export properties it is necessary to add the **StiOptions.Export.Rtf...** prefix. For example, **StiOptions.Export.Rtf.UsePageRefField**.

| Name | Type | Description |
|---|---|---|
| UsePageRefField | bool | when exporting a header with page numbers (for example, the "Anchors" report) the MS-Word "PAGEREF" command should be used for page numbers. Page numbers in the table of contents will be dynamically changed; if false, then numbers of pages will be static; by default true |

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| Name | Type | Description |
|---|---|---|
| ConvertDigitsToArabic | bool | convert ASCII digits into Arabic digits; by default false |
| ArabicDigitsType | enum | select type of Arabic digits; by default Standard |
| DivideSegmentPages | bool | divide segmented pages into separate pages; if false then are exported "as is" without dividing; by default true |
| LineHeightExactly | bool | export rows heights of a table "exactly"; if false then the height is exported as "at least"; by default true |
| RemoveEmptySpaceAtBottom | bool | remove empty space on the bottom of a page; by default true |
| LineSpacing | double | coefficient of correction of a row height in multilined text fields; by default 0.965 |
| RightMarginCorrection | int | correction of the right margin of a cell; by default 0 |
| SpaceBetweenCharacters | int | sets space between characters of a font in twips; negative value corresponds to condensation; by default -2 |
| UseCanBreakProperty | bool | use the CanBreak property when exporting rows of a table; by default true |
| DivideBigCells | bool | divide big cells into smaller ones for easier editing and scrolling; by default true |

## 13.6.3. Word 2007

Microsoft Word is a text processing software produces by Microsoft. It is a component of the Microsoft Office system. The first version was released for IBM PCs running DOS in 1983. Later there was a release for Apple Macintosh (1984), SCO UNIX, and Microsoft Windows (1989). Microsoft Word is the most popular text processors. Starting with first versions MS Word could write files in binary code with the «.doc» extension. The Word specification was secret and only in 2008 was published. The latest version of **Word 2007** "uses by default" the XML based format: Microsoft Office Open XML. For a new format the «**.docx**» file extension is used. This format is a zip-archive that contains a text as XML, graphics, and other data. When exporting, a report is converted into one table. Such a document is easy to edit.

### 13.6.3.1. Headers and Footers

Depending on the value of the **Use Page Headers and Footers** property a report is exported in the following way:

- the value is false - a report is exported "as is" and looks as in preview;
- the value is true - a report is additionally processed. All changes are described below.

The list of changes of the document:

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- PageHeaders and PageFooters are exported as MS-Word objects. So they are cut from a table and all other bands are exported as one table. It is very convenient, if it is necessary to elaborate the document (add rows or edit a text in cells, change cell size); in this case all data are moved but headers and footers stay on their place. (Notice: a header and a footer of the first page are taken, others are ignored).
- Row height is not exported (the "not set" mode; by default - the "precise" mode).

#### 13.6.3.1.1 Page Numbering.

If the Tag is not empty then the content of the Tag field is exported. The Text field is not exported. Also the string may contain the following expressions, which are changed on MS-Word commands:

| | |
|---|---|
| #PageNumber# | The number of the current page (PAGE) |
| #TotalPageCount# | Total number of pages in a document (NUMPAGES) |

For example, in the Tag field the following expression can be written:

```
Page #PageNumber# of #TotalPageCount#
```

When exporting #PageNumber# and #TotalPageCount# will be replaced on "PageNumber" field and "TotalPageCount" field and will be automatically changed together with text.

### 13.6.3.2. Export Settings

The export parameters of the Word 2007 export are described in the **StiWord2007ExportSettings** class. The description of all class properties are in the table below.

| Name | Type | Description |
|---|---|---|
| ImageQuality | float | image quality; may have values from 0.0 (the lowest quality) to 1.0 (the highest quality); by default 0.75 |
| ImageResolution | float | image quality; may have values from 0.0 (the lowest quality) to 1.0 (the highest quality), by default 100 |
| UsePageHeadersAndFooters | bool | process headers and foorets of a page; by default false |

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#### 13.6.3.3. Static Options

Static properties of export to Word 2007. To access to export properties it is necessary to add the **StiOptions.Export.Word2007...** prefix. For example, **StiOptions.Export.Word2007.DivideSegmentPages**.

| Name | Type | Description |
|---|---|---|
| DivideSegmentPages | bool | divide segmented pages into separate pages; if false then are exported "as is" without dividing; by default true |
| AllowImageComparer | bool | use the image comparer, e.g. replace image duplicates (see Common export settings); if false then an image is exported "as is"; by default true |
| LineHeightExactly | bool | export the rows height of a table "exactly"; if false then the height is exported as "at least"; by default true |
| RemoveEmptySpaceAtBottom | bool | remove empty space on the bottom of a page; by default true |
| RightMarginCorrection | int | correction of the right margin of a cell; by default 0 |
| SpaceBetweenCharacters | int | sets the space between characters of a font (in twips); negative value corresponds to condensed; by default -2 |

## 13.6.4. ODT

Open Document Text (**ODT**) is the open document for storing documents of the OpenOffice Writer, which is included into the OpenOffice.org package.

OpenOffice.org is the open package of office applications created as alternative to Microsoft Office. OpenOffice.org was one of the first what supported the new open OpenDocument. Works on Microsoft Windows and UNIX systems: GNU/Linux, Mac OS X, FreeBSD, Solaris, Irix.

OpenDocument Format (ODF) is the open file format for storing office documents, including text documents, spreadsheets, images, data bases, presentations. This format is based on the XML format.

OpenOffice Writer is the text processor and visual HTML editor, included into the OpenOffice. It is open software (LGPL license). Writer is similar to Microsoft Word and has approximately the same functionality. Writer allows saving documents in different formats including Microsoft Word, RTF, XHTML, and OASIS Open Document Format. Starting with the OpenOffice version 2.0, the OpenDocument Format is the default format for saving documents. File have the «.odt» extension.

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When exporting the report is converted into a single table. The document is easily editable but some objects can be changed.

#### 13.6.4.1. Export Settings

The export parameters of the ODT export are described in the **StiOdtExportSettings** class. The description of all class properties are in the table below.

| Name | Type | Description |
|---|---|---|
| ImageQuality | float | image quality; may have values from 0.0 (the lowest quality) to1.0 (the highest quality); by default 0.75 |
| ImageResolution | float | image resolution, dot per inch; may have any value, by default 100 |

#### 13.6.4.2. Static Options

Static properties of export to ODT. To access to export properties it is necessary to add the **StiOptions.Export.Odt...** prefix. For example, **StiOptions.Export.Odt.DivideSegmentPages**.

| Name | Type | Description |
|---|---|---|
| DivideSegmentPages | bool | divide segmented pages into separate pages; if false then are exported "as is" without dividing; by default true |
| AllowImageComparer | bool | use the image comparer, e.g. replace image duplicates (see Common export settings); if false then an image is exported "as is"; by default true |
| RemoveEmptySpaceAtBottom | bool | remove empty space on the bottom of a page; by default true |

## 13.7. Spreadsheets

This group of exports create spreadsheets. They are exports to both different formats of Microsoft Excel and to OpenOffice Calc.

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## 13.7.1. Excel

**Microsoft Excel** is a spreadsheet application written and distributed by Microsoft for Microsoft Windows. It allows using calculation, graphing tools, pivot tables and a macro programming language called VBA. So, it is the most popular table processor available for these platforms since version 5 in 1993.

Microsoft Excel up until Excel 2007 version used a proprietary binary file format called Binary Interchange File Format (BIFF) and **.xls** file extension. Specification was closed but since 2008 it was published. Besides, most of Microsoft Excel can read CSV, DBF, SYLK, DIF, and other formats.

### 13.7.1.1. Excel Sheets

By default a report is exported as one table to one sheet of Excel. Maximal number of rows on a sheet is unlimited. It depends on the Excel version and is set using the **MaximumSheetHeight** static property (by default 65534, for Excel XP and Excel 2003). If the number of rows is more than default then odd rows will be carried on the next sheet.

Also it is possible to export each page of a report on a single sheet of Excel. To do this it is possible to set the **ExportEachPageToSheet** property to **true**.

Besides the forced Excel sheets creation they can be created using the **ExcelSheet** property to what any value can be assigned. If some sheets has the same **ExcelSheet** value then they are joined and exported as one sheet. In this case the name of a sheet is a name of a value.

### 13.7.1.2. Compatibility of Different Versions

The **XLS** format is based on the BIFF8 specification. Full support of this format is realized starting with the Excel 9.0 (Excel 2000).

**Excel 8.0 (Excel 97)**:
- does not support correct color;
- does not fully support the **Right to Left** mode.

**Excel 7.0 (Excel 95) and earlier versions:**
- does not support vertical alignment in a cell;
- does not support integrated cells;
- does not support some other parameters.

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### 13.7.1.3. Export Settings

The export parameters of the XLS export are described in the **StiExcelExportSettings** class. The description of all class properties are in the table below.

| Name | Type | Description |
|---|---|---|
| ImageQuality | float | image quality; may have values from 0.0 (the lowest quality) to1.0 (the highest quality); by default 0.75 |
| ImageResolution | float | image resolution, dot per inch; may have any value, by default 100 |
| UseOnePageHeaderAndFooter | bool | remove from a report all page headers (except the first one) and all page footers (except the last one); by default false |
| ExportDataOnly | bool | export data only, e.g. all components which are placed on data bands; by default false |
| ExportPageBreaks | bool | export page breaks; by default false |
| ExportObjectFormatting | bool | export object formatting; by default true |
| ExportEachPageToSheet | bool | export each page of a report as a sheet; by default false |

The ExportObjectFormatting property works only if the ExportDataOnly is set to true.

### 13.7.1.4. Static Options

Static properties of export to Excel. To access to export properties it is necessary to add the **StiOptions.Export.Excel...** prefix. For example, **StiOptions.Export.Excel.AllowExportDateTime**.

| Name | Type | Description |
|---|---|---|
| AllowExportDateTime | bool | export date and time; if false then date and time are exported as text strings; by default false |
| ColumnsRightToLeft | bool | set the order of columns from right to left; by default false |
| MaximumSheetHeight | int | maximal number of rows on a sheet; remaining rows are transfered on the next sheet; by default 65534 |
| RemoveEmptySpaceAtBottom | bool | remove empty space on the bottom of a page; by default true |
| ShowGridLines | bool | show grid lines; by default true |

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## 13.7.2. Excel XML

For storing documents as the basic Microsoft Excel format, right up to the Excel 2007 version, used its own binary format of files (BIFF) and the file extension was «.xls». In **Excel 2003** additionally, a new format based on XML (XMLSS) was used. This opened format is convenient for developers and is data oriented. The basic disadvantage of the format is impossibility to embed raster images.

## 13.7.3. Excel 2007

For storing documents as the basic Microsoft Excel format, right up to the Excel 2007 version, used its own binary format of files (BIFF) and the file extension was «.xls». In **Excel 2007**, the basic format is the Microsoft Office Open XML format and stores document in files with the «.**xlsx**» extension. The Excel 2007 is compartible with binary formats such as CSV, DBF, SYLK, DIF, and others.

### 13.7.3.1. Sheets in Excel

By default a report is exported as one table to one Excel sheet. Maximal number of rows on a sheet in limited. It depend on the version of Excel and is set using the **MaximumSheetHeight** static property (by default 1048574 for Excel 2007). If rows are too many then redundant rows will be output on the next sheet. Also it is possible to export each page of a report to the single sheet Excel. To do this, it is necessary to set the **ExportEachPageToSheet** property to **true**.

Each page of a report has the **ExcelSheet** property to what any expression may assign any expression. Numbers of pages with the same value in the "ExcelSheet" are combined and exported to a single sheet of Excel. The name of the sheet becomes the value of the expression.

### 13.7.3.2. Export Settings

The export parameters of the Excel 2007 export are described in the **StiExcel2007ExportSettings** class. The description of all class properties are in the table below.

| Name | Type | Description |
|---|---|---|
| ImageQuality | float | image quality; may have values from 0.0 (the lowest quality) to1.0 (the highest quality); by default 0.75 |
| ImageResolution | float | image resolution, dot per inch; may have any value, by default 100 |

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| Name | Type | Description |
|---|---|---|
| UseOnePageHeaderAndFooter | bool | remove from a report all page headers (except the first one) and all page footers (except the last one); by default false |
| ExportDataOnly | bool | export data only, e.g. all components which are placed on data bands; by default false |
| ExportPageBreaks | bool | export page breaks; by default false |
| ExportObjectFormatting | bool | export object formatting; by default true |
| ExportEachPageToSheet | bool | export each page of a report as a sheet; by default false |

The **ExportObjectFormatting** property works only if the **ExportDataOnly** is **true**.

#### 13.7.3.3. Static Options

Static properties of export to Excel 2007.

| Name | Type | Description |
|---|---|---|
| AllowImageComparer | bool | use the image comparer, e.g. replace image duplicates (see Common export settings); if false then an image is exported "as is"; by default true |
| ColumnsRightToLeft | bool | set the order of columns from right to left; by default false |
| MaximumSheetHeight | int | maximal number of rows on a sheet; odd rows are moved to the next sheet; by default 1048574 |
| RemoveEmptySpaceAtBottom | bool | remove empty space on the bottom of a page; by default true |

### 13.7.4. ODS

Open Document Spreadsheet (**ODS**) is the opened format to store OpenOffice Calc spreadsheet documents, that is included into the OpenOffice.org package.

OpenOffice.org is a free package of office applications developed as alternative to Microsoft Office. The OpenDocument is one of the first what started to support the opened format. it works on Microsoft Windows and UNIX-like systems: GNU/Linux, Mac OS X, FreeBSD, Solaris, Irix.

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OpenDocument Format (ODF) — an open document file format for storing and exchanging editable documents including text documents (such as notes, reports, and books), spreadsheets, drawings, databases, presentations. The format is based on the XML-format. The standard was jointly developed by public and various organizations and is available to all and can be used without restrictions.

OpenOffice Calc is the table processor that is included into the OpenOffice and is a free software (LGPL license). Calc is similar to the Microsoft Excel spreadsheet and functionality of these processors is approximately equal. Calc allows you to saving documents to various formats, including Microsoft Excel, CSV, HTML, SXC, DBF, DIF, UOF, SLK, SDC. Starting with version OpenOffice 2.0, for document storage format by default OpenDocument Format, files are saved with the extension «. Ods». Starting with the OpenOffice version 2.0 for storing documents, by default, the OpenDocument Format is used. Files are stored with the «.ods» extension.

### 13.7.4.1. Export Settings

The export parameters of the ODS export are described in the **StiOdsExportSettings** class. The description of all class properties are in the table below.

| Name | Type | Description |
|---|---|---|
| ImageQuality | float | image quality; may have values from 0.0 (the lowest quality) to1.0 (the highest quality); by default 0.75 |
| ImageResolution | float | image resolution, dot per inch; may have any value, by default 100 |

### 13.7.4.2. Static Options

Static properties of export to ODS. To access to export properties it is necessary to add the **StiOptions.Export.Ods...** prefix. For example, **StiOptions.Export.Ods.AllowImageComparer**.

| Name | Type | Description |
|---|---|---|
| AllowImageComparer | bool | use the image comparer, e.g. replace image duplicates (see Common export settings); if false then an image is exported "as is"; by default true |
| DivideSegmentPages | bool | divide segmented pages into separate pages; if false then are exported "as is" without dividing; by default true |
| RemoveEmptySpaceAtBottom | bool | remove empty space on the bottom of a page; by default true |

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# 13.8. Data

This is a group of file formats which are formats to store table data.

## 13.8.1. CSV

**CSV** (Comma Separated Values) is a text format that is used to represent table data. Each string of the file is one row of the table. The values of each column are separated by the delimiter that depends on regional settings. The values that contain reserved characters (such as a comma or a new string) are framed with the double quotes ( ") symbol; if double quotes are found in the value they are represented as two double quotes in the file.

**Notice!** Only those data (components) can be exported to the **CSV** format which are placed on data bands. If the **SkipColumnHeaders** property is set to **false** then, additionally, column headers are exported as the first row.

### 13.8.1.1. Controlling Exports

The following elements can be specified in the Tag field to control export:
- Export Type : "FieldName"
- Column: "FieldName" "DataRow"

Several elements should be separated with the semicolon.

The "Export Type" element indicates for which export the field name is set. The values can be used: “dbf”, “csv”, “xml”, “default”. The "FieldName" element indicates the field name in the file. The own name can be specified to each type of export. If the name for each export is not specified then the name for the “default” type is taken. For example

```
DBF : "Describe" ; CSV : "Description" ; default: "Default name"
```

The "Column" element indicates that additional field is added to exported data. The "FieldName" element indicated the name of a new field. The "DataRow" element indicates the content of a new field and can be an expression. For example:

```
Column: "SortField" "{Products.Categories.CategoryName}"
```

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#### 13.8.1.2. Export Settings

The export parameters of the CSV export are described in the **StiCsvExportSettings** class. The description of all class properties are in the table below.

| Name | Type | Description |
|---|---|---|
| Separator | string | sets the symbol-separator of a list that is used when exporting; by default CurrentCulture.TextInfo.ListSeparator |
| Encoding | Encoding | text file coding; by default Encoding.UTF8 |
| SkipColumnHeaders | bool | skip headers of columns; by default false |

#### 13.8.1.3. Static Options

Static properties of export to CSV. To access to export properties it is necessary to add the **StiOptions.Export.Csv...** prefix. For example, **StiOptions.Export.Csv.ForcedSeparator**.

| Name | Type | Description |
|---|---|---|
| ForcedSeparator | string | sets the separator forcibly which are used in export; if the empty string is set then the symbol from export settings in used; by default - empty string |

### 13.8.2. DBF

The **DBF** (DataBase File) is the format to store data and it is used as the standard way to store and pass information. The DBF file consist of a header section for describing the structure of the data in the file. There are several variations on the .dbf file structure.

**Notice!** Only data can be exported to the **DBF** format, in other words only the components, which are placed on data bands.

#### 13.8.2.1. Controlling Exports

The following elements can be specified in the Tag field to control export:
- DataType [ : FieldLength [ : DecimalPartLength ] ]
- ExportType : "FieldName"
- Column: "FieldName" "DataString"

Several elements should be separated with the semicolon. The “DataType" element should be only

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one and should be placed first, other elements – if necessary.

Values of the "DataType" element are shown in the table below. If the data type is not set, then the **string** data type is taken by default. The "FieldLength" element sets fixed width of a data field. If the field width is not set, then the width is taken from the table. For the **string** type the default width is the longest string. The "DecimalPartLength" element sets the number of characters after comma. If it is not set, then the default number is taken.

| Data type | DBF data type (default size) | Description |
|---|---|---|
| int | Numeric (15 : 0) | Numeric |
| long | Numeric (25 : 0) | Numeric |
| float | Numeric (15 : 5) | Decimal |
| double | Numeric (20 : 10) | Decimal |
| string | Character (auto) | Text |
| date | Date (8) | Date |

Sample of using elements are shown in the table below.

| | |
|---|---|
| string : 25 | set the column width (25 characters) and cuts all long strings |
| float | converts decimal digit with the length 15 characters, 5 characters after comma |
| float :10 | converts decimal digit with the length 10 characters, 5 characters after comma |
| float :10 : 2 | converts decimal digit with the length 10 characters, 2 characters after comma |
| int :10 : 2 | converts integer digit with the length 10 characters; the second parameter is ignored |

**Notice!** If the integer part of a digit is long and cannot be placed into the specified field, then it is cut, so data are lost. For example, if the write «-12345,678» in the «float:8:3» field, then the «2345,678» will be output.

The "ExportType" element indicates for which export the field name is set. The values can be used: “dbf”, “csv”, “xml”, “default”. The "FieldName" element indicates the field name in the file (for the DBF the is automatically cut up to 10 characters). The own name can be specified to each type of export. If the name for each export is not specified then the name for the “default” type is taken. For example:

```
DBF : "Describe" ; XML : "Description" ; default: "Default name"
```

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The "Column" element indicates that the additional field is added to the exported data. The "FieldName" element indicates the name of a new field. The "DataRow" element indicates the content of a new field and can be expression. For example

```
Column: "SortField" "{Products.Categories.CategoryName}"
```

#### 13.8.2.2. Export Settings

The export parameters of the DBF export are described in the **StiDbfExportSettings** class. The description of all class properties are in the table below.

| Name | Type | Description |
|---|---|---|
| CodePage | StiDbfCodePages | a code page of a file; by default StiDbfCodePages.Default |

### 13.8.3. XML

**XML** (eXtensible Markup Language) is a text format that is used to store structured data (in exchange for existed files of data bases), for exchange of information between programs and also to create on its base the special markup languages (for example, XHTML), sometimes called dictionaries. XML is the hierarchical structure that is used to store any data. Visually this structure can be represented as the tree. XML supports Unicode and other encoding.

**Notice!** Only those data (components) are exported to the XML format which are placed on data bands.

#### 13.8.3.1. Controlling Exports

The following elements can be specified in the Tag field to control export to XML:
- DataType
- ExportType : "FieldName"
- Column: "FieldName" "DataRow"

Several elements should be separated with the semicolon. The “DataType" element should be only one and should be placed first, other elements – if necessary.

Values of the "DataType" element are shown in the table below. If the data type is not set, then the **string** data type is taken by default.

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| Data type | Description |
|---|---|
| int | Numeric |
| long | Numeric |
| float | Decimal |
| double | Decimal |
| string | Text |
| date | Date |

The "ExportType" element indicates for which export the field name is set. The values can be used: “dbf”, “csv”, “xml”, “default”. The "FieldName" element indicates the field name in the file. The own name can be specified to each type of export. If the name for each export is not specified then the name for the “default” type is taken. For example:

```
DBF : "Describe" ; XML : "Description" ; default: "Default name"
```

The "Column" element indicates that additional field is added to the exported data. The "FieldName" element indicates the name of a new field. The "DataRow" element indicates the content of a new field and can be expression. For example:

```
Column: "SortField" "{Products.Categories.CategoryName}"
```

## 13.8.4. DIF

**DIF** (Data Interchange Format) is a text format that is used to exchange sheets between spreadsheets processors (Microsoft Excel, OpenOffice.org Calc, Gnumeric, StarCalc, Lotus 1-2-3, FileMaker, dBase, Framework, Multiplan, etc). The only limitation of this format is that the DIF format may contain only one sheet in one book.

### 13.8.4.1. Export Settings

The export parameters of the DIF export are described in the **StiDifExportSettings** class. The description of all class properties are in the table below.

| Name | Type | Description |
|---|---|---|

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| | | |
|---|---|---|
| ExportDataOnly | bool | export data only. e.g. only components placed on data bands; by default false |
| Encoding | Encoding | file encoding; by default Encoding.ASCII |
| UseDefaultSystemEncoding | bool | use the default system encoding; if false then use encoding that is set by the Encoding property; by default true |

### 13.8.5. SYLK

**SYLK** (Symbolic Link) format- this text format is used to exchange data between applications, specifically spreadsheets. Files of SYLK have «**.slk**» extension. Microsoft does not publish a SYLK specification, therefore work with this format in different applications can be different.

**Notice**. A SYLK file can be written in Unicode and read by some applications but anyway many applications which do support Unicode writes SYLK files into ANSI but not Unicode. Therefore, symbols which do not have representation in the system code page will be written as ('?') symbols.

#### 13.8.5.1. Export Settings

The export parameters of the SYLK export are described in the **StiSylkExportSettings** class. The description of all class properties are in the table below.

| Name | Type | Description |
|---|---|---|
| ExportDataOnly | bool | export data only. e.g. only components placed on data bands; by default false |
| Encoding | Encoding | file encoding; by default Encoding.ASCII |
| UseDefaultSystemEncoding | bool | use the default system encoding; if false then use encoding that is set by the Encoding property; by default true |

## 13.9. Images

Export groups to graphic formats. All graphic formats can be divided in to types: bitmapped images and vector formats.

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### 13.9.1. BMP

**BMP** (Bitmap) is an image file format used to store bitmap digital images. Initially the format could store only DDB (Device Dependent Bitmap) but today the BMP format stores device-independent rasters (DIB - Device Independent Bitmap). Color depth in this format varies from 1 to 48 bits per pixel. The maximal image size is 65535×65535 pixels. An image can be compressed but often is stored in uncompressed and has big size of the file. Many programs work with the BMP format because its support is integrated into Windows and OS/2.

### 13.9.2. GIF

**GIF** (Graphics Interchange Format) is a format to store graphic images. The GIF format can store compressed images, supports up to 8 bits per pixel, allowing a single image to reference a palette of up to 256 distinct colors. The GIF format was introduced by CompuServe in 1987 and has since come into widespread usage on the World Wide Web. In 1989 the format was modified (GIF89a), and transparency and animation was added. GIF uses LZW-compression. It allows reducing the file size without degrading the visual quality (logos, schemes). GIF is widely used in World Wide Web.

### 13.9.3. PNG

**PNG** (Portable Network Graphics) - is a bitmapped image format that employs lossless data compression. PNG was created to improve and replace more simple GIF format, and to replace more complicated TIFF format. In compare with the GIF format, the PNG format supports RGB images without color losses, supports alpha channels, and uses DEFLATE (open algorithm of compression), that provides higher compression of multicolored files. The PNG format is usually used in World Wide Web and for graphic editing.

### 13.9.4. TIFF

**TIFF** (Tagged Image File Format) is a file format for storing images. Originally, the TIFF format was created by the Aldus company in cooperation with Microsoft for using with PostScript. TIFF became popular for storing high-color-depth images, and is used for scanning, fax, to identify text, polygraphy and widely used in graphic applications. This format is flexible. It allows saving photos in different color spaces, and to use different algorithms of file compression, and to store a few images in one file.

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### 13.9.5. JPEG

**JPEG** (Joint Photographic Experts Group) is a format to store images. This format was created by C-Cube Microsystems as effective method to store high-color-depth images. For example, scanned photos with smooth variations of tone and color. Algorithm of compression with losing information is used in the JPEG format. This means that some visual quality is lost in the process and cannot be restored. It is necessary to get the highest coefficient of compression. Unpacked JPEG images are rarely have the same quality as original image but differences are insignificant. Compression ratio is usually set in conventional units, for example from 1 to 100. 100 is the best quality and 1 is the worst quality. The better quality the bigger file size.

### 13.9.6. PCX

**PCX** is a format to store images. This format was used in the ZSoft PC Paintbrush graphic editor (one of the most popular programs) for MS-DOS, text processors and Microsoft Word and Ventura Publisher. This is not so popular format analogue of BMP but is supported with such graphics editors as Adobe Photoshop, Corel Draw and others. The algorithm of compression is very quick but is not effective for compression of photos and other detailed computer graphics. Today this format is not displaced with formats which supports better compression. These formats are GIF, JPEG, and PNG.

### 13.9.7. EMF

**WMF** (Windows MetaFile) is a universal graphics file format on Microsoft Windows systems. This format was created by Microsoft and is an integral part of Windows because this file stores a list of function calls that have to be issued to the Windows graphics layer GDI in order to display an image on screen.

WMF is a 16-bit format. This format was introduced in Windows 3.0. A 32-bit version is called Enhanced Metafile **EMF** (Enhanced Metafile). The EMF format supports many new commands, supports work with the GDI+ library, and also is used as a graphic language for drivers of printers.

### 13.9.8. SVG

**SVG** (Scalable Vector Graphics) is an XML-based file format for describing two-dimensional vector graphics, both static and dynamic. The **SVG** specification is an open standard. **SVG** supports scripting and animation. The vector image is composed of a fixed set of shapes.
SVG allows three types of graphic objects:
- Vector graphics;
- Raster graphics;
- Text.

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The Images below shows the difference between exporting Bitmap format and SVG (vector) format.

Bitmap Formats

SVG Format

## 13.9.9. Compressed SVG

In addition to the **SVG** file format, there is a **compressed SVG** (with file extension **SVGZ**), which applies industry-standard, nonproprietary "gzip" compression (an open-source variant of Zip compression) to **SVG** files. Compressed SVG files are typically 50 to 80 percent smaller than SVG files.
**SVG** files are compact and can be used to provide high-quality graphics on the Web.

## 13.9.10. Dither

**Dither** is an intentionally applied form of noise, when processing digit signals. It is used in most often surfaces in the fields of digital audio and video. The following image shows (from left to right) original image and the result of export to monochrome image. There are three modes of **DitheringType**: **Ordered**, **FloydSteinberg**, **None**.

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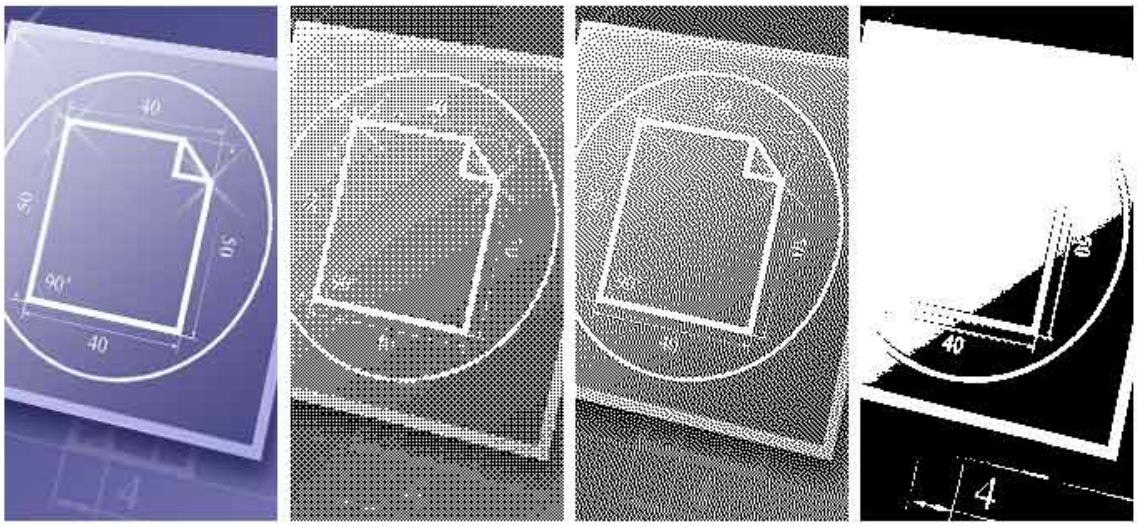

**Notice**. On the current moment the export of monochrome image is supported only to the PCX format. So the DitheringType property works only for this export.

Different images may look differently in these modes. The **FloydSteinberg** is the best mode to output an image but the file size is too big.

## 13.9.11. Export Parameters

All exports of images have the same export settings. They are described in the table below. But each format has its own ExportSettings class. For BMP, GIF, PNG, TIFF, JPEG, PCX, and EMF the following classes are used in exports. The **StiBmpExportSettings** is used for export to BMP, **StiGifExportSettings** is used for export to GIF, **StiPngExportSettings** is used for export to PNG, **StiTiffExportSettings** is used for export to TIFF, **StiJpegExportSettings** is used for export to JPEG, **StiPcxExportSettings** is used for export to PCX, and **StiEmfExportSettings** is used for export to EMF.

| Name | Type | Description |
|---|---|---|
| ImageZoom | double | image zoom coefficient; by default 1.0 |
| CutEdges | bool | cut page edges; by default false |
| ImageFormat | StiImageFormat | Image format - colored, tint of grey or monochrome; by default StiImageFormat.Color |
| MultipleFiles | bool | saves pages of a report into separate files; can be used for TIFF only, because it can save some pages into one file, other formats save pages into separate files; by default false |

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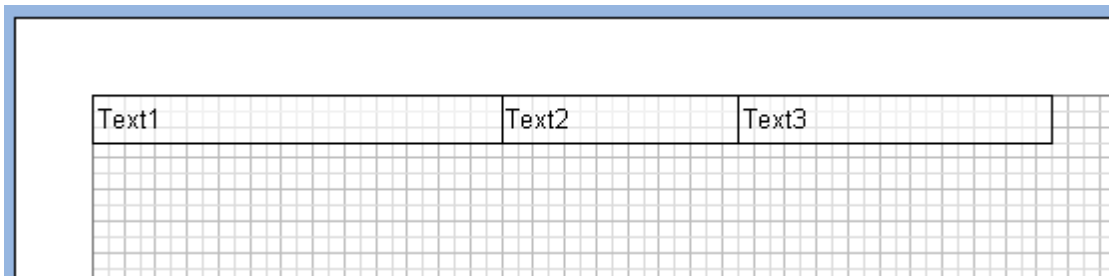
| | | |
|---|---|---|
| DitheringType | StiMonochromeDitheringType | a type of image dithering to get monochrome image; by default StiMonochromeDitheringType. FloydSteinberg |

## 13.10. How to Create Report for Export?

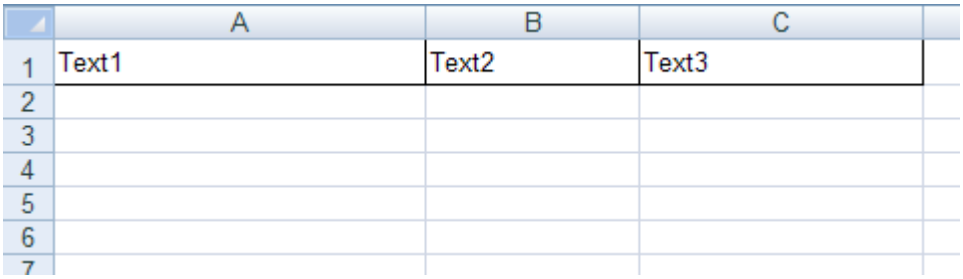
Many exports have the table mode. In this mode the whole report is converted into one table. Creating correct templates from the source code allows making the table look much better, decrease the size of the file, increase the speed of working with export. Therefore, when using the table mode of export it is important to follow some recommendations:

- use the "Align to Grid" button of the designer. This will decrease the number of rows and columns in the output file; also this allows avoiding very small gaps between components (some formats "do not like" table with very small columns);
- put components on the data band at the same level (see the picture below); this will decrease the number of rows and columns in the output file;

For example: put three components in the designer. They should be placed without gaps. See the picture below:




As a result we get a simple table: one row and three columns.




Put three components as seen on the picture below.

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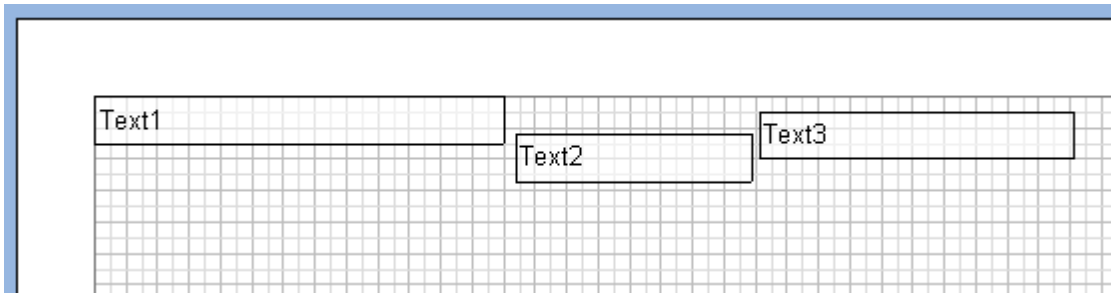
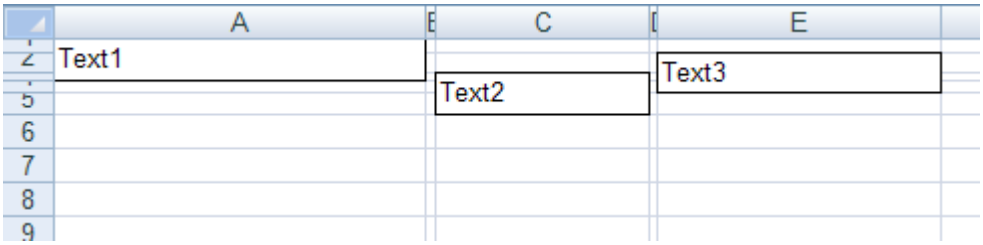



As a result we get the Excel table: five rows and three cells (see the picture below). It is not convenient to edit such a table, the file size, time of export, and required memory are increased in some times.




- do not use the **Autowidth** property. This property increases the number of columns in the exported file which is proportionally to number of records.

| | Company |
|---|---|
| 2 | Alfreds Futterkiste |
| 3 | Ana Trujillo Emparedados y helados |
| 4 | Antonio Moreno Taquería |
| 5 | Around the Horn |
| 6 | Berglunds snabbköp |
| 7 | Blauer See Delikatessen |
| 8 | Blondesddsl père et fils |
| 9 | Bólido Comidas preparadas |
| 10 | Bon app' |
| 11 | Bottom-Dollar Markets |
| 12 | B's Beverages |
| 13 | Cactus Comidas para llevar |
| 14 | Centro comercial Moctezuma |

| | Company |
|---|---|
| 2 | Alfreds Futterkiste |
| 3 | Ana Trujillo Emparedados y helados |
| 4 | Antonio Moreno Taquería |
| 5 | Around the Horn |
| 6 | Berglunds snabbköp |
| 7 | Blauer See Delikatessen |
| 8 | Blondesddsl père et fils |
| 9 | Bólido Comidas preparadas |
| 10 | Bon app' |
| 11 | Bottom-Dollar Markets |
| 12 | B's Beverages |
| 13 | Cactus Comidas para llevar |
| 14 | Centro comercial Moctezuma |

On the left picture the number of columns is 14, and this case is equal in number of data rows. If to disable the **AutoWidth** property then only one column will be output (see the right picture). Accordingly, the file size of a report, shown of the right picture, is some times smaller then the file of

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the report shown on the left picture and the export works faster.

**Notice**. Number of columns is very important for the text editors. For example, MS Word allows no more than 64 columns; if the table has more than 64 columns then the document is output incorrectly.

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# Importing Reports

# 14. Importing Reports

The section describes the tools for converting third party formats to internal Stimulsoft Reports formats.

## 14.1. Import Reports from Crystal Reports

The Import.CrystalReports utility is used to convert templates from the Crystal Reports (*.rpt) format to the Stimulsoft Reports (*.mrt) format.

**System requirements**
The .rpt file format is closed. Therefore, work with these templates is done via Crystal Reports interfaces using the managed dll. So, for work with this utility, installed Crystal Reports is required.

**Work with utility**
The Import.CrystalReports interface consists of the following items:

Crystal Reports Template
The Crystal Reports Template field is used to specify the path to the selected report template in the Crystal Reports (*.rpt) format. A path and a name can be selected either using the Browse button on the right or by writing the path or a name manually.

**Stimulsoft Reports Template**
The Stimulsoft Reports Template field is used to specify the path where the final report template in the Stimulsoft Reports (*.mrt) format is saved. A path and a name can be selected either using the Browse button that is placed on the right or to write it manually.

**Use primitives instead of shapes for the Line and the Box**
If the flag is not enabled then the Line and the Box components will be converted to ordinary primitives (shapes, VerticalLine/HorizontalLine, and Rectangle/RoundedRectangle). If the flag is enabled then the Line and the Box components will be converted to special primitives (VerticalLinePrimitive/HorizontalLinePrimitive and RectanglePrimitive/RoundedRectanglePrimitive). When viewing/printing reports, there are no big differences between graphic and special primitives. Graphic primitives are exported as images when exporting. So it is easier to work with special primitives. But, due to Crystal Reports peculiarity, special primitives cannot work correctly on complex reports. This is why there is the ability to select the option.

**Use functions for Formula Fields**
In each Formula Field either expression or a data string can be placed. Each Formula Field is converted into the variable in the data dictionary. If the Use functions for Formula Fields flag is enabled, then the Function flag is set in the variable. In other words, when report rendering, Stimulsoft Reports will use the value of a variable as an expression and will try to calculate the value of this expression. If the Use functions for Formula Fields flag is not enabled, then the value of a variable will be used as the data string.

**Information**
In this field the result of file conversion will be shown.

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**Problems with conversion**
One of the main problems in conversion is that not all object properties are available when working with managed dll. The second problem is the different reporting tools structures, such as data structures, work with bands etc. Therefore, it is not always possible to convert a report automatically, and it is required to correct a report manually.

**Most frequent problems:**
**- DataBase:**
Crystal Reports often uses their internal libraries when working with data bases. It is possible to get only some properties from .NET and it is impossible to get ConnectionString. So, not all data bases can be identified. By default, for not identified data bases, the StiOleDbDatabase type and ConnectionString template without specifying the provider is used.

**- DataBases:**
In CrystalReports, each report/subreport has its own data dictionary, and the data base will be described differently in subreports. In Stimulsoft Reports, the common data dictionary is used. So, all dictionaries are united after conversion. If the data base is repeated then it is not included into the common dictionary.

**- Image:**
Sizes and locations can be indicated for images but, if it is saved in the report template, then it is impossible to get the content of an image.

**- FormulaField:**
Expressions and formulas can be placed in these fields. On the current moment, parsing and syntax of these expressions are written “as is”. So in many cases further manual correction is required. {Crystal Reports allows using expressions and formulas in FormulaFields. On the current moment parsing and syntax conversion cannot be done, expressions are written 'as is'. Therefore, in many cases, it is required further manual correction of expressions.}

## 14.2. Import Reports from RTF

The Import.RTF tool allows you to quickly and easily convert your .rtf document to the .mrt format of Stimulsoft Reports. You need is to specify the path to the .rtf document in the **RichTextFile** field, and then, in the **Stimulsoft Reports Template** field, choose the path to save the .mrt file. Then click the **Convert** button. Then run the report designer and continue editing the document.

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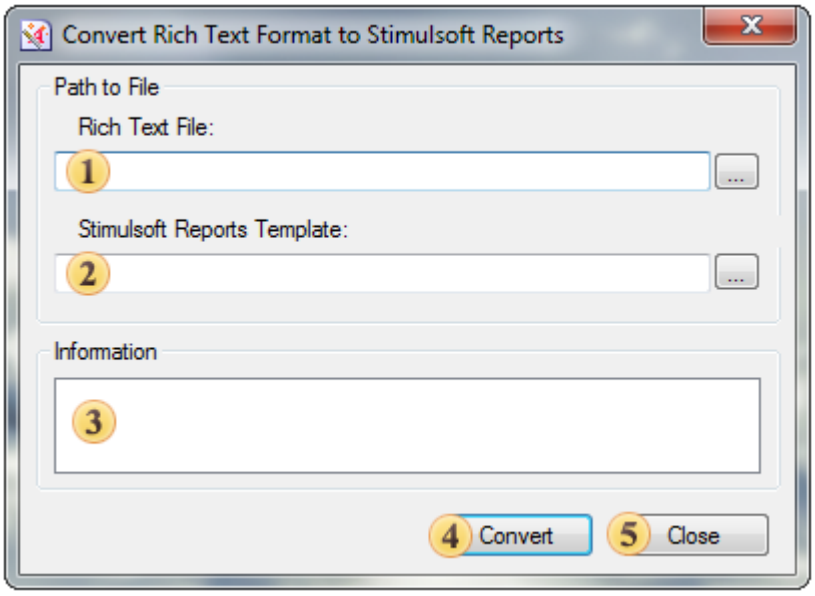


1 The **Rich Text File** field is used to specify the RTF file you wish to convert.
2 The **Stimulsoft Reports Template** is used to specify the path where you wish to save the converted RTF file as an .mrt file.
3 The **Information** field shows the progress of conversion process.
4 The **Convert** button is used to run the conversion.
5 The **Close** button is used to either close the tool dialog after conversion or to cancel the conversion.

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# Part XV

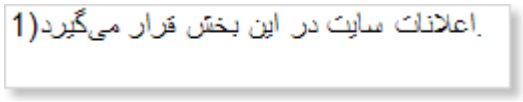
# Right To Left

# 15. Right To Left

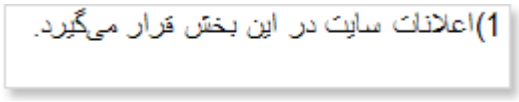
By default, components are output from left to right. The **Right to Left** property allows changing the mode of showing report items.

## 15.1. Text Component

How the text will be output depends on the **RightToLeft** property. If it is set to **false**, then a text (all symbols except letters) is output from left to right. The picture below shows a text sample in Arabic that is output from left to right:




If the **RightToLeft** property is set to **true**, then a text is output from right to left. The picture below shows a text sample in Arabic that is output from right to left:




In any case a text written in a right-to-left language will be output right to left.

## 15.2. Text In Cells Component

A text in cells is placed symbol-by-symbol (one symbol or a space - one cell). How the text will be output depends on the **RightToLeft** property. If it is set to **false**, then a text is output from left to right. The picture below shows a text sample in Arabic that is output from left to right:

If the **RightToLeft** property is set to **true**, then a text is output from left to right. The picture below shows a text sample in Arabic that is output from right to left:

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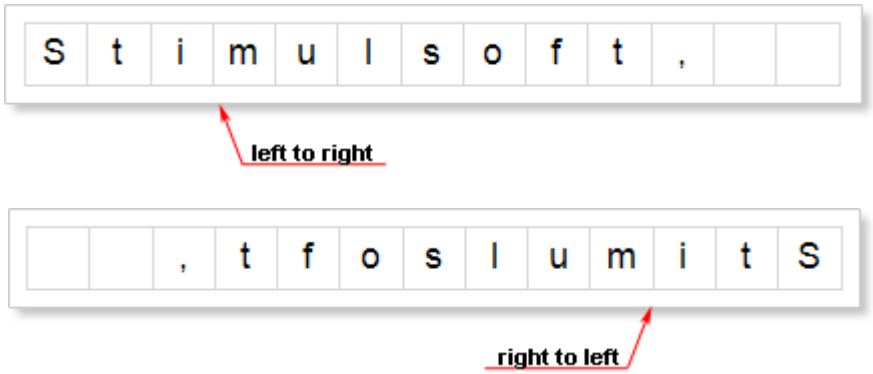
The **RightToLeft** property of the **Text in Cells** component works the same way with all languages. So a text characters and sy6mbols will be output from left to right or from right to right depending on the value of this property. The picture below shows a text output in "left to right" (the first picture) and right to left (second picture) modes:




The **RightToLeft** property depends on the **Continuous Text** property. If the **Continuous Text** property is set to **true**, then the **RightToLeft** property will not work. In other words, a text will be output from left to right regardless the **RightToLeft** property. If the **Continuous Text** property is set to **false**, then the text direction will depend on the value of the **RightToLeft** property.

## 15.3. Cross Table Component

The cross table component has the **RightToLeft** property, that allows showing a cross-table in the right-to-left mode. If the **RightToLeft** property is set to **false**, then the cross table is rendered in the "left-to-right" mode. The picture below shows a cross table sample with the **RightToLeft** property set to **false**:

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| Products | CategoryName | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Country | Beverages | Condiments | Confections | Dairy Products | Grains/Cereals | Meat/Poultry | Produce | Seafood | Total |
| Australia | 15 | 24 | 29 | | 38 | | 20 | 42 | 168 |
| Brazil | 20 | | | | | | | | 20 |
| Canada | | 113 | 17 | | | 136 | | | 266 |
| Denmark | | | | | | | | 100 | 100 |
| Finland | 57 | | 75 | | | | | | 132 |
| France | 86 | | | 98 | | | | 62 | 246 |
| Germany | 125 | 32 | 140 | | 22 | | 26 | 10 | 355 |
| Italy | | | | 23 | 57 | | | | 80 |
| Japan | | 39 | | | | 29 | 39 | 55 | 162 |
| Netherlands | | | 51 | | | | | | 51 |
| Norway | | | | 164 | | | | | 164 |
| Singapore | 17 | 27 | | | 26 | | | | 70 |
| Spain | | | | 108 | | | | | 108 |
| Sweden | | | | | 165 | | | 224 | 389 |
| UK | 56 | 13 | 74 | | | | | | 143 |
| USA | 183 | 259 | | | | | 15 | 208 | 665 |
| Total | 559 | 507 | 386 | 393 | 308 | 165 | 100 | 701 | 3119 |

If the **RightToLeft** property of a cross table is set to **true**, then the cross table is output in the "right-to-left" mode. The picture below shows a cross table sample with the **RightToLeft** property set to **true**:

| CategoryName | | | | | | | | | Products |
|---|---|---|---|---|---|---|---|---|---|
| Total | Seafood | Produce | Meat/Poultry | Grains/Cereals | Dairy Products | Confections | Condiments | Beverages | Country |
| 168 | 42 | 20 | | 38 | | 29 | 24 | 15 | Australia |
| 20 | | | | | | | | 20 | Brazil |
| 266 | | | 136 | | | 17 | 113 | | Canada |
| 100 | 100 | | | | | | | | Denmark |
| 132 | | | | | | 75 | | 57 | Finland |
| 246 | 62 | | | | 98 | | | 86 | France |
| 355 | 10 | 26 | | 22 | | 140 | 32 | 125 | Germany |
| 80 | | | | 57 | 23 | | | | Italy |
| 162 | 55 | 39 | 29 | | | | 39 | | Japan |
| 51 | | | | | | 51 | | | Netherlands |
| 164 | | | | | 164 | | | | Norway |
| 70 | | | | 26 | | | 27 | 17 | Singapore |
| 108 | | | | | 108 | | | | Spain |
| 389 | 224 | | | 165 | | | | | Sweden |
| 143 | | | | | | 74 | 13 | 56 | UK |
| 665 | 208 | 15 | | | | | 259 | 183 | USA |
| 3119 | 701 | 100 | 165 | 308 | 393 | 386 | 507 | 559 | Total |

By default, the **RightToLeft** property of the cross table is set to **false**, this means that the cross table is output from left to right.

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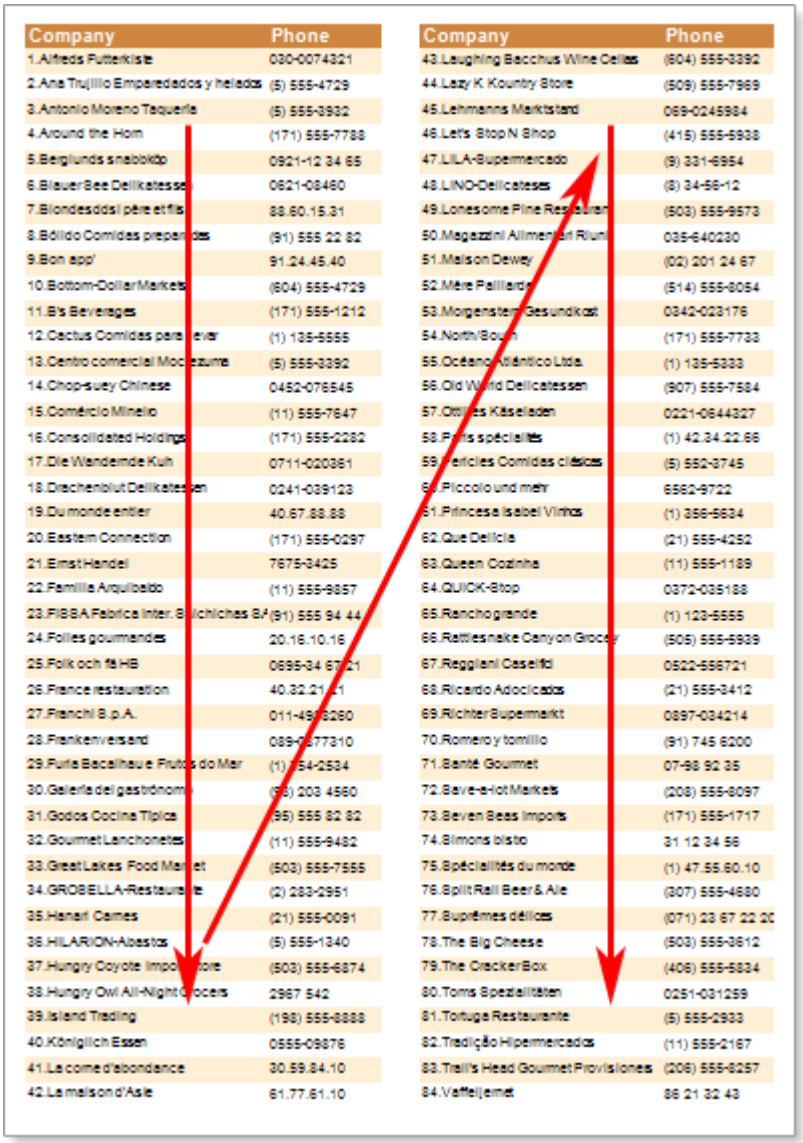
## 15.4. Columns on Page

**Stimulsoft Reports** prints bands until there is a free space on a page. Then, instead of creating a new page, the reporting tool adds a new column on the right. Then it prints data from the top of a page. This happens until all data are printed and page will be exhausted. The columns direction is always from top to bottom, and a mode of showing columns can be different. there are two modes: "left to right" and "right to left". The mode of showing columns on a page depends on the value of the **RightToLeft** property of a page. If the **RightToLeft** property is set to **false**, then columns will be output in the "left to right" mode. If this property of a page is set to **true**, then columns will be output in the "right to left" mode. The picture below shows columns on a page output in two modes:



| Company | Phone |
|---|---|
| 1.Alfreds Futterkiste | 030-0074321 |
| 2.Ana Trujillo Emparedados y helados | (5) 555-4729 |
| 3.Antonio Moreno Taquería | (5) 555-3932 |
| 4.Around the Horn | (171) 555-7788 |
| 5.Berglunds snabbköp | 0921-12 34 65 |
| 6.Blauer See Delikatessen | 0621-08460 |
| 7.Blondesddsl père et fils | 88.60.15.31 |
| 8.Bólido Comidas preparadas | (91) 555 22 82 |
| 9.Bon app' | 91.24.45.40 |
| 10.Bottom-Dollar Markets | (604) 555-4729 |
| 11.B's Beverages | (171) 555-1212 |
| 12.Cactus Comidas para llevar | (1) 135-5555 |
| 13.Centro comercial Moctezuma | (5) 555-3392 |
| 14.Chop-suey Chinese | 0452-076545 |
| 15.Comércio Mineiro | (11) 555-7647 |
| 16.Consolidated Holdings | (171) 555-2282 |
| 17.Die Wandernde Kuh | 0711-020361 |
| 18.Drachenblut Delikatessen | 0241-039123 |
| 19.Du monde entier | 40.67.88.88 |
| 20.Eastern Connection | (171) 555-0297 |
| 21.Ernst Handel | 7675-3425 |
| 22.Famille Arquibaldo | (11) 555-9857 |
| 23.FISSA Fabrica Inter. Salchichas SA | (91) 555 94 44 |
| 24.Folies gourmandes | 20.16.10.16 |
| 25.Folk och fä HB | 0695-34 67 21 |
| 26.France restauration | 40.32.21.21 |
| 27.Franchi S.p.A. | 011-4988260 |
| 28.Frankenversand | 089-0877310 |
| 29.Furia Bacalhau e Frutos do Mar | (1) 354-2534 |
| 30.Galería del gastrónomo | (93) 203 4560 |
| 31.Godos Cocina Típica | (95) 555 82 82 |
| 32.Gourmet Lanchonetes | (11) 555-9482 |
| 33.Great Lakes Food Market | (503) 555-7555 |
| 34.GROSELLA-Restaurante | (2) 283-2951 |
| 35.Hanari Carnes | (21) 555-0091 |
| 36.HILARION-Abastos | (5) 555-1340 |
| 37.Hungry Coyote Import Store | (503) 555-6874 |
| 38.Hungry Owl All-Night Grocers | 2967 542 |
| 39.Island Trading | (198) 555-8888 |
| 40.Königlich Essen | 0555-09876 |
| 41.La corne d'abondance | 30.59.84.10 |
| 42.La maison d'Asie | 61.77.61.10 |

| Company | Phone |
|---|---|
| 43.Laughing Bacchus Wine Cellars | (604) 555-3392 |
| 44.Lazy K Kountry Store | (509) 555-7969 |
| 45.Lehmanns Marktstand | 069-0245984 |
| 46.Let's Stop N Shop | (415) 555-5938 |
| 47.LILA-Supermercado | (9) 331-6954 |
| 48.LINO-Delicateses | (8) 34-56-12 |
| 49.Lonesome Pine Restaurant | (503) 555-9573 |
| 50.Magazzini Alimentari Riuniti | 035-640230 |
| 51.Maison Dewey | (02) 201 24 67 |
| 52.Mère Paillarde | (514) 555-8054 |
| 53.Morgenstern Gesundkost | 0342-023176 |
| 54.North/South | (171) 555-7733 |
| 55.Océano Atlántico Ltda. | (1) 135-5333 |
| 56.Old World Delicatessen | (907) 555-7584 |
| 57.Ottilies Käseladen | 0221-0644327 |
| 58.Paris spécialités | (1) 42.34.22.66 |
| 59.Pericles Comidas clásicas | (5) 552-3745 |
| 60.Piccolo und mehr | 6562-9722 |
| 61.Princesa Isabel Vinhos | (1) 356-5634 |
| 62.Que Delícia | (21) 555-4252 |
| 63.Queen Cozinha | (11) 555-1189 |
| 64.QUICK-Stop | 0372-035188 |
| 65.Rancho grande | (1) 123-5555 |
| 66.Rattlesnake Canyon Grocery | (505) 555-5939 |
| 67.Reggiani Caseifici | 0522-556721 |
| 68.Ricardo Adocicados | (21) 555-3412 |
| 69.Richter Supermarkt | 0897-034214 |
| 70.Romero y tomillo | (91) 745 6200 |
| 71.Santé Gourmet | 07-98 92 35 |
| 72.Save-a-lot Markets | (208) 555-8097 |
| 73.Seven Seas Imports | (171) 555-1717 |
| 74.Simons bistro | 31 12 34 56 |
| 75.Spécialités du monde | (1) 47.55.60.10 |
| 76.Split Rail Beer & Ale | (307) 555-4680 |
| 77.Suprêmes délices | (071) 23 67 22 20 |
| 78.The Big Cheese | (503) 555-3612 |
| 79.The Cracker Box | (406) 555-5834 |
| 80.Toms Spezialitäten | 0251-031259 |
| 81.Tortuga Restaurante | (5) 555-2933 |
| 82.Tradição Hipermercados | (11) 555-2167 |
| 83.Trail's Head Gourmet Provisioners | (206) 555-8257 |
| 84.Vaffeljernet | 86 21 32 43 |

left to right

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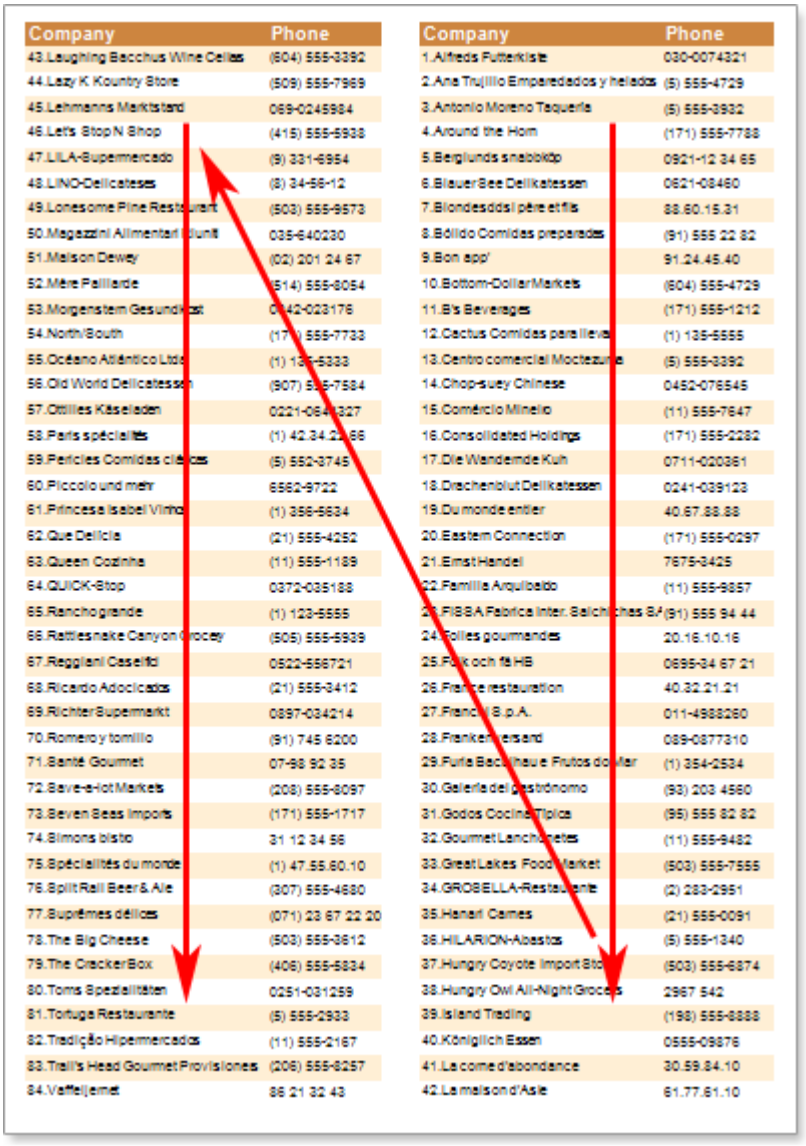

| Company | Phone |
|---|---|
| 43.Laughing Bacchus Wine Cellars | (604) 555-3392 |
| 44.Lazy K Kountry Store | (509) 555-7969 |
| 45.Lehmanns Marktstand | 069-0245984 |
| 46.Let's Stop N Shop | (415) 555-5938 |
| 47.LILA-Supermercado | (9) 331-6954 |
| 48.LINO-Delicateses | (8) 34-56-12 |
| 49.Lonesome Pine Restaurant | (503) 555-9573 |
| 50.Magazzini Alimentari Riuniti | 035-640230 |
| 51.Maison Dewey | (02) 201 24 67 |
| 52.Mère Paillarde | (514) 555-8054 |
| 53.Morgenstern Gesundkost | 0342-023176 |
| 54.North/South | (171) 555-7733 |
| 55.Océano Atlántico Ltda. | (1) 135-5333 |
| 56.Old World Delicatessen | (907) 555-7584 |
| 57.Ottilies Käseladen | 0221-0644327 |
| 58.Paris spécialités | (1) 42.34.22.66 |
| 59.Pericles Comidas clásicas | (5) 552-3745 |
| 60.Piccolo und mehr | 6562-9722 |
| 61.Princesa Isabel Vinhos | (1) 356-5634 |
| 62.Que Delícia | (21) 555-4252 |
| 63.Queen Cozinha | (11) 555-1189 |
| 64.QUICK-Stop | 0372-035188 |
| 65.Rancho grande | (1) 123-5555 |
| 66.Rattlesnake Canyon Grocery | (505) 555-5939 |
| 67.Reggiani Caseifici | 0522-556721 |
| 68.Ricardo Adocicados | (21) 555-3412 |
| 69.Richter Supermarkt | 0897-034214 |
| 70.Romero y tomillo | (91) 745 6200 |
| 71.Santé Gourmet | 07-98 92 35 |
| 72.Save-a-lot Markets | (208) 555-8097 |
| 73.Seven Seas Imports | (171) 555-1717 |
| 74.Simons bistro | 31 12 34 56 |
| 75.Spécialités du monde | (1) 47.55.60.10 |
| 76.Split Rail Beer & Ale | (307) 555-4680 |
| 77.Suprêmes délices | (071) 23 67 22 20 |
| 78.The Big Cheese | (503) 555-3612 |
| 79.The Cracker Box | (406) 555-5834 |
| 80.Toms Spezialitäten | 0251-031259 |
| 81.Tortuga Restaurante | (5) 555-2933 |
| 82.Tradição Hipermercados | (11) 555-2167 |
| 83.Trail's Head Gourmet Provisioners | (206) 555-8257 |
| 84.Vaffeljernet | 86 21 32 43 |

| Company | Phone |
|---|---|
| 1.Alfreds Futterkiste | 030-0074321 |
| 2.Ana Trujillo Emparedados y helados | (5) 555-4729 |
| 3.Antonio Moreno Taquería | (5) 555-3932 |
| 4.Around the Horn | (171) 555-7788 |
| 5.Berglunds snabbköp | 0921-12 34 65 |
| 6.Blauer See Delikatessen | 0621-08460 |
| 7.Blondesddsl père et fils | 88.60.15.31 |
| 8.Bólido Comidas preparadas | (91) 555 22 82 |
| 9.Bon app' | 91.24.45.40 |
| 10.Bottom-Dollar Markets | (604) 555-4729 |
| 11.B's Beverages | (171) 555-1212 |
| 12.Cactus Comidas para llevar | (1) 135-5555 |
| 13.Centro comercial Moctezuma | (5) 555-3392 |
| 14.Chop-suey Chinese | 0452-076545 |
| 15.Comércio Mineiro | (11) 555-7647 |
| 16.Consolidated Holdings | (171) 555-2282 |
| 17.Die Wandernde Kuh | 0711-020361 |
| 18.Drachenblut Delikatessen | 0241-039123 |
| 19.Du monde entier | 40.67.88.88 |
| 20.Eastern Connection | (171) 555-0297 |
| 21.Ernst Handel | 7675-3425 |
| 22.Familia Arquibaldo | (11) 555-9857 |
| 23.FISSA Fabrica Inter. Salchichas S.A. | (91) 555 94 44 |
| 24.Folies gourmandes | 20.16.10.16 |
| 25.Fök och fä HB | 0695-34 67 21 |
| 26.France restauration | 40.32.21.21 |
| 27.Franchi S.p.A. | 011-4988260 |
| 28.Frankenversand | 089-0877310 |
| 29.Furia Bacalhau e Frutos do Mar | (1) 354-2534 |
| 30.Galería del gastrónomo | (93) 203 4560 |
| 31.Godos Cocina Típica | (95) 555 82 82 |
| 32.Gourmet Lanchonetes | (11) 555-9482 |
| 33.Great Lakes Food Market | (503) 555-7555 |
| 34.GROSELLA-Restaurante | (2) 283-2951 |
| 35.Hanari Carnes | (21) 555-0091 |
| 36.HILARION-Abastos | (5) 555-1340 |
| 37.Hungry Coyote Import Store | (503) 555-6874 |
| 38.Hungry Owl All-Night Grocers | 2967 542 |
| 39.Island Trading | (198) 555-8888 |
| 40.Königlich Essen | 0555-09876 |
| 41.La corne d'abondance | 30.59.84.10 |
| 42.La maison d'Asie | 61.77.61.10 |

**right to left**

## 15.5. Chart Component

The **Reverse Horizontal** property is used to flip a chart horizontally. The picture below shows an example of a chart, with the **Reverse Horizontal** property set to **false** (As one can see, the values of the x-axis have left to right direction.):

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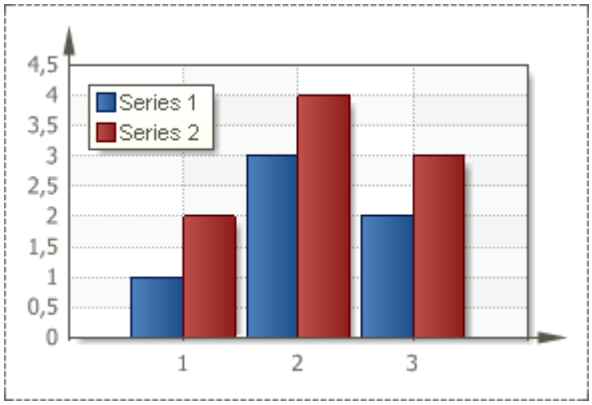
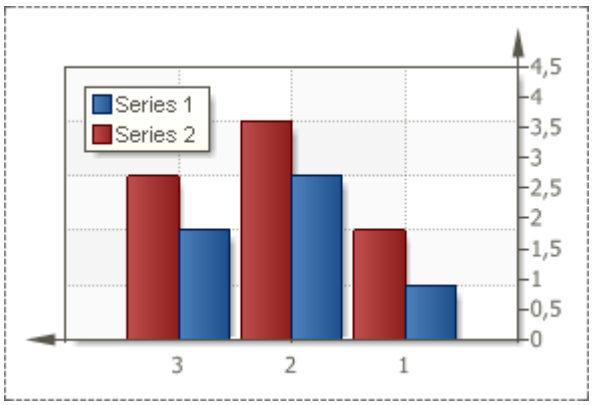



If the **Reverse Horizontal** property is set to **true**, then the chart will appear in the opposite direction horizontally. The picture below shows an example of a chart, with the **Reverse Horizontal** property is set to **true** (As one can see, the values of the x-axis have right to left direction.):




By default, the **Reverse Horizontal** property is set to **false**.

## 15.6. Columns in Data Band

### "Down Then Right" direction

In this direction the reporting tool tries equally to distribute all rows between columns. Then, after distribution rows between columns, the first column is output. And the column is not output to the end of a page, but until the number of elements that are distributed for this column. Then the second column is output. So the data take as much space on the page as it is required. So data will be distributed approximately equally among all the columns. And all data will be presented on a sheet in a convenient form. The mode of showing columns depends on the value of the **RightToLeft** property of the **DataBand**. If the **RightToLeft** property is set to **false**, then columns on the report page will be displayed from left to right. If the **RightToLeft** property is set to **true**, then the column on the report page will be displayed from right to left. The picture below shows examples of two modes of showing columns on report pages:

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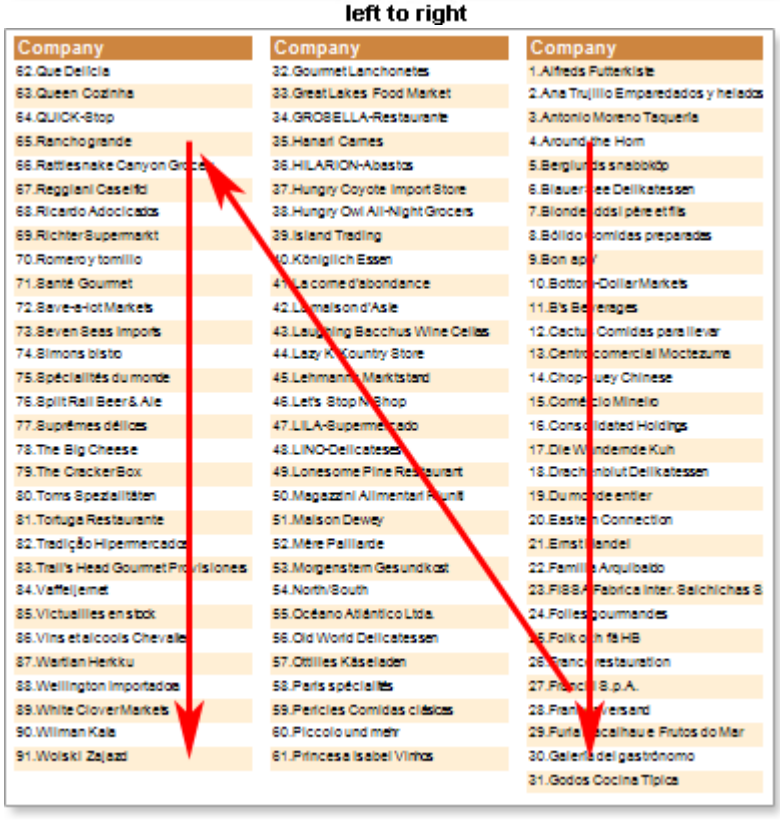
| Company | Company | Company |
|---|---|---|
| 1.Alfreds Futterkiste | 32.Gourmet Lanchonetes | 62.Que Delícia |
| 2.Ana Trujillo Emparedados y helados | 33.Great Lakes Food Market | 63.Queen Cozinha |
| 3.Antonio Moreno Taquería | 34.GROSELLA-Restaurante | 64.QUICK-Stop |
| 4.Around the Horn | 35.Hanari Carnes | 65.Rancho grande |
| 5.Berglunds snabbköp | 36.HILARION-Abastos | 66.Rattlesnake Canyon Grocery |
| 6.Blauer See Delikatessen | 37.Hungry Coyote Import Store | 67.Reggiani Caseifici |
| 7.Blondesddsl père et fils | 38.Hungry Owl All-Night Grocers | 68.Ricardo Adocicados |
| 8.Bólido Comidas preparadas | 39.Island Trading | 69.Richter Supermarkt |
| 9.Bon app' | 40.Königlich Essen | 70.Romero y tomillo |
| 10.Bottom-Dollar Markets | 41.La corne d'abondance | 71.Santé Gourmet |
| 11.B's Beverages | 42.La maison d'Asie | 72.Save-a-lot Markets |
| 12.Cactus Comidas para llevar | 43.Laughing Bacchus Wine Cellars | 73.Seven Seas Imports |
| 13.Centro comercial Moctezuma | 44.Lazy K Kountry Store | 74.Simons bistro |
| 14.Chop-suey Chinese | 45.Lehmanns Marktstand | 75.Spécialités du monde |
| 15.Comércio Mineiro | 46.Let's Stop N Shop | 76.Split Rail Beer & Ale |
| 16.Consolidated Holdings | 47.LILA-Supermercado | 77.Suprêmes délices |
| 17.Die Wandernde Kuh | 48.LINO-Delicateses | 78.The Big Cheese |
| 18.Drachenblut Delikatessen | 49.Lonesome Pine Restaurant | 79.The CrackerBox |
| 19.Du monde entier | 50.Magazzini Alimentari Riuniti | 80.Toms Spezialitäten |
| 20.Eastern Connection | 51.Maison Dewey | 81.Tortuga Restaurante |
| 21.Ernst Handel | 52.Mère Paillarde | 82.Tradição Hipermercados |
| 22.Familia Arquibaldo | 53.Morgenstern Gesundkost | 83.Trail's Head Gourmet Provisioners |
| 23.FISSA Fabrica Inter. Salchichas S.A. | 54.North/South | 84.Vaffeljernet |
| 24.Folies gourmandes | 55.Océano Atlántico Ltda. | 85.Victuailles en stock |
| 25.Folk och fä HB | 56.Old World Delicatessen | 86.Vins et alcools Chevalier |
| 26.France restauration | 57.Ottilies Käseladen | 87.Wartian Herkku |
| 27.Franchi S.p.A. | 58.Paris spécialités | 88.Wellington Importadora |
| 28.Frankenversand | 59.Pericles Comidas clásicas | 89.White Clover Markets |
| 29.Furia Bacalhau e Frutos do Mar | 60.Piccolo und mehr | 90.Wilman Kala |
| 30.Galería del gastrónomo | 61.Princesa Isabel Vinhos | 91.Wolski Zajazd |
| 31.Godos Cocina Típica | | |

**left to right**



| Company | Company | Company |
|---|---|---|
| 62.Que Delícia | 32.Gourmet Lanchonetes | 1.Alfreds Futterkiste |
| 63.Queen Cozinha | 33.Great Lakes Food Market | 2.Ana Trujillo Emparedados y helados |
| 64.QUICK-Stop | 34.GROSELLA-Restaurante | 3.Antonio Moreno Taquería |
| 65.Rancho grande | 35.Hanari Carnes | 4.Around the Horn |
| 66.Rattlesnake Canyon Grocery | 36.HILARION-Abastos | 5.Berglunds snabbköp |
| 67.Reggiani Caseifici | 37.Hungry Coyote Import Store | 6.Blauer See Delikatessen |
| 68.Ricardo Adocicados | 38.Hungry Owl All-Night Grocers | 7.Blondesddsl père et fils |
| 69.Richter Supermarkt | 39.Island Trading | 8.Bólido Comidas preparadas |
| 70.Romero y tomillo | 40.Königlich Essen | 9.Bon app' |
| 71.Santé Gourmet | 41.La corne d'abondance | 10.Bottom-Dollar Markets |
| 72.Save-a-lot Markets | 42.La maison d'Asie | 11.B's Beverages |
| 73.Seven Seas Imports | 43.Laughing Bacchus Wine Cellars | 12.Cactus Comidas para llevar |
| 74.Simons bistro | 44.Lazy K Kountry Store | 13.Centro comercial Moctezuma |
| 75.Spécialités du monde | 45.Lehmanns Marktstand | 14.Chop-suey Chinese |
| 76.Split Rail Beer & Ale | 46.Let's Stop N Shop | 15.Comércio Mineiro |
| 77.Suprêmes délices | 47.LILA-Supermercado | 16.Consolidated Holdings |
| 78.The Big Cheese | 48.LINO-Delicateses | 17.Die Wandernde Kuh |
| 79.The CrackerBox | 49.Lonesome Pine Restaurant | 18.Drachenblut Delikatessen |
| 80.Toms Spezialitäten | 50.Magazzini Alimentari Riuniti | 19.Du monde entier |
| 81.Tortuga Restaurante | 51.Maison Dewey | 20.Eastern Connection |
| 82.Tradição Hipermercados | 52.Mère Paillarde | 21.Ernst Handel |
| 83.Trail's Head Gourmet Provisioners | 53.Morgenstern Gesundkost | 22.Familia Arquibaldo |
| 84.Vaffeljernet | 54.North/South | 23.FISSA Fabrica Inter. Salchichas S.A. |
| 85.Victuailles en stock | 55.Océano Atlántico Ltda. | 24.Folies gourmandes |
| 86.Vins et alcools Chevalier | 56.Old World Delicatessen | 25.Folk och fä HB |
| 87.Wartian Herkku | 57.Ottilies Käseladen | 26.France restauration |
| 88.Wellington Importadora | 58.Paris spécialités | 27.Franchi S.p.A. |
| 89.White Clover Markets | 59.Pericles Comidas clásicas | 28.Frankenversand |
| 90.Wilman Kala | 60.Piccolo und mehr | 29.Furia Bacalhau e Frutos do Mar |
| 91.Wolski Zajazd | 61.Princesa Isabel Vinhos | 30.Galería del gastrónomo |
| | | 31.Godos Cocina Típica |

**right to left**

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## "Right Then Down" direction

In this direction lines are sequentially output in the **Data Band**. By default the mode of output is left to right. Row are displayed - one line in one column. When all rows are displayed in columns in the **Data Band**, a new Data Band is created and it again displays all the rows in columns. So, the data will take as much space on the page as it is required. The mode of showing columns depends on the value of the **RightToLeft** property of the **DataBand**. If the **RightToLeft** property is set to **false**, then columns on the report page will be displayed from left to right. If the **RightToLeft** property is set to **true**, then the column on the report page will be displayed from right to left. The picture below shows examples of two modes of showing columns on report pages:

**left to right**

**right to left**

## 15.7. WinForms Report Viewer

There is a capability to change the mode of showing viewer items and order of showing report pages in **WinForms**. By default, showing of all elements of the viewer and the display order of pages of the report is left to right. How the viewer will look like can depend on the static **RightToLeft** property of the viewer. If the **RightToLeft** property is set to **No**, then the viewer items and pages of the report in the viewer window are shown from left to right. Code below show how to set the left to right mode of showing viewer items and report pages:

```
StiOptions.Viewer.RightToLeft = StiRightToLeftType.No;
```

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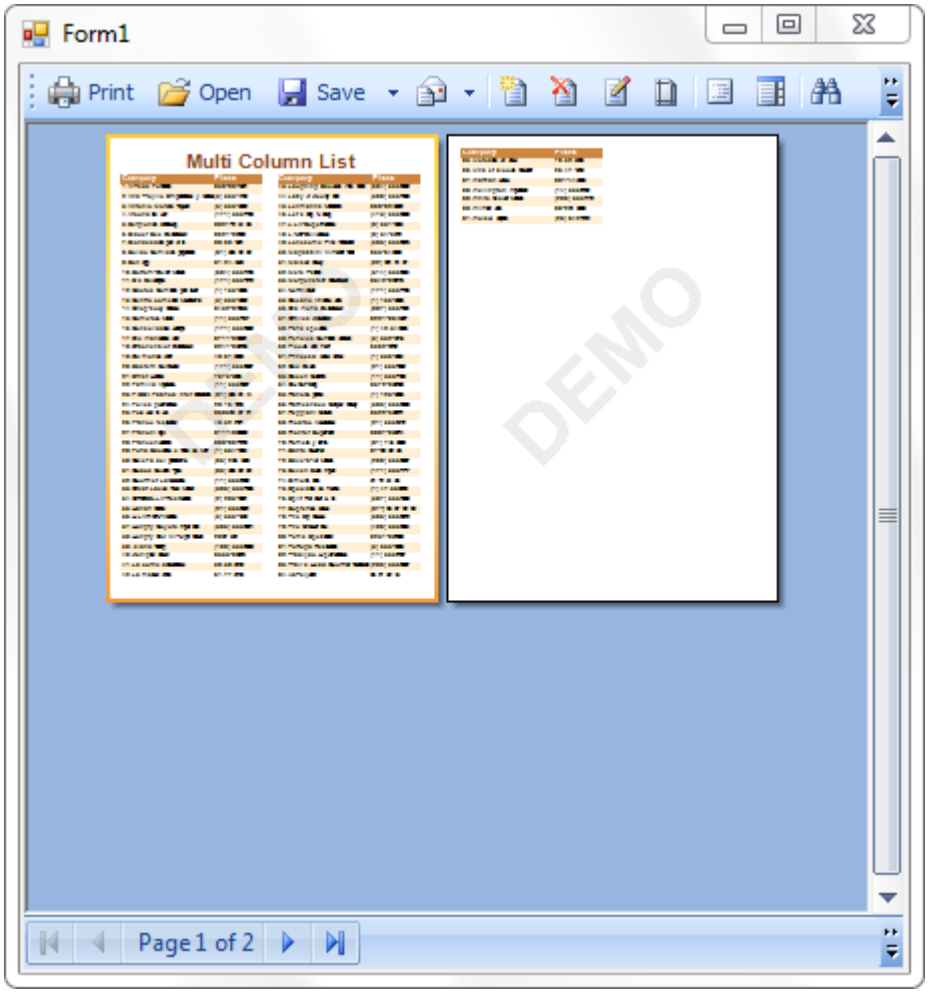


If the **RightToLeft** property is set to **Yes**, then viewer items and report pages in a viewer window are displayed from right to left. The code for setting the right to left mode is shown below:

```
StiOptions.Viewer.RightToLeft = StiRightToLeftType.No;
```

The picture below shows how a viewer window looks like when setting the right to left mode:

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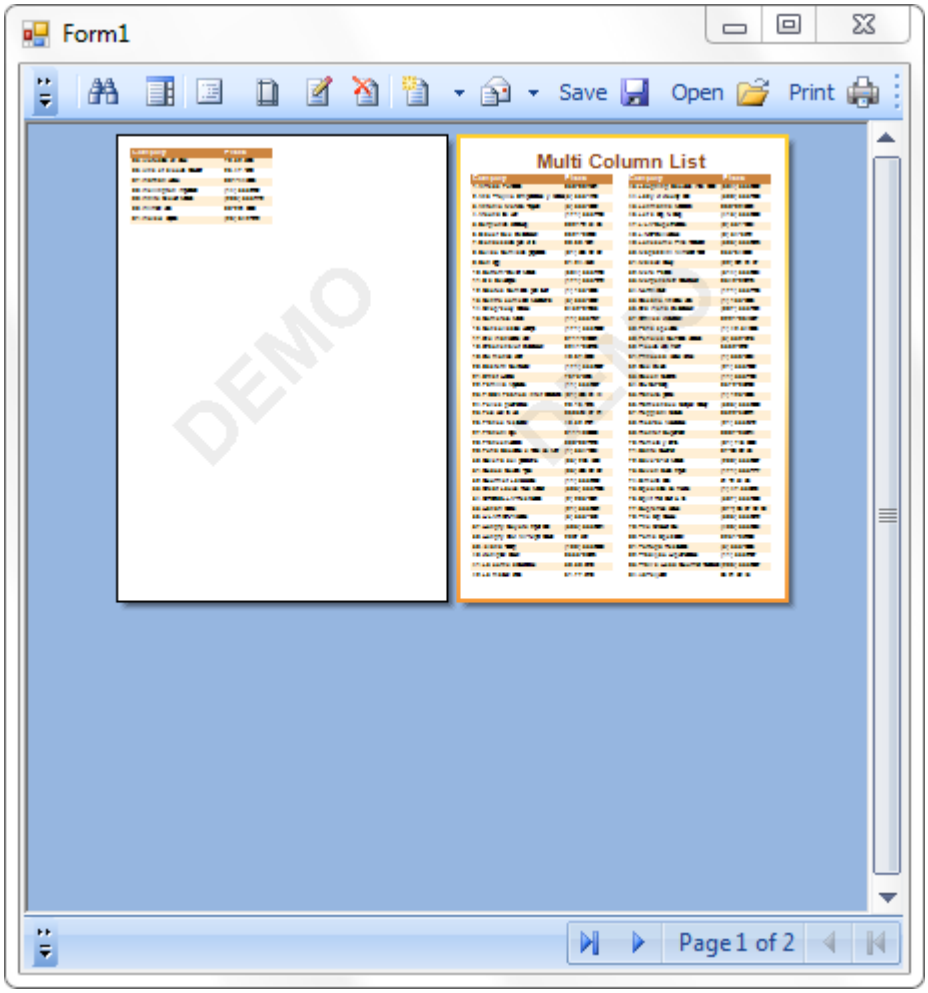


As seen of the picture the order of showing report pages depends on the **RightToLeft** property. But the mode of showing a report does not depend on the value of the static **RightToLeft** property of the viewer.

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# Part XVI

# Deployment

# 16. Deployment

## 16.1. Assemblies

Stimulsoft Reports.Net is delivered with the following assemblies:

**Stimulsoft.Base.dll**
Baseline assembly of the report generator.

**Stimulsoft.Editor.dll**
Text editor that is used in the report designer.

**Stimulsoft.Controls.dll**
Controls which are used in the report generator.

**Stimulsoft.Controls.Win.dll**
Controls which are used in the report generator.

**Stimulsoft.Report.dll**
Baseline assembly that contains the base functionality of the report generator.

**Stimulsoft.Report.Win.dll**
Assembly that contains the WinForms Viewer.

**Stimulsoft.Report.Design.dll**
Assembly that contains the WinForms Designer.

**Stimulsoft.Database.dll**
This dll is used to create and edit connections strings. Also this dll contains QueryBuilder.

**Stimulsoft.Report.Web.dll**
This assembly helps to show reports in ASP.NET and contains the Web Viewer.

**Demo.exe**
Application that demonstrates the potential of Stimulsoft Reports.Net

**Configurator.exe**
Application that is used to edit the Stimulsoft Reports.Net configuration.

**Installer.exe**
The application that helps to install Stimulsoft Reports.Net into GAC. Also it helps to use the NGEN utility.

**Browser.exe**
Application that is used for reports browsing.

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**Designer.exe**
The Stimulsoft Reports.Net report designer.

## 16.2. Assemblies in WPF

Stimulsoft Reports.Wpf is delivered with the following assemblies:

**Stimulsoft.Base.dll**
Baseline assembly of the report generator.

**Stimulsoft.Report.dll**
Baseline assembly that contains the base functionality of the report generator.

**Stimulsoft.Report.Wpf.dll**
Assembly that contains WPF Viewer.

**Stimulsoft.Report.WpfDesign.dll**
Assembly that contains WPF Designer.

**Stimulsoft.Database.dll**
This dll is used to create and edit connections string. Also this dll contains QueryBuilder.

**Demo.Wpf.exe**
Application that demonstrates the potential of Stimulsoft Reports.Wpf

**Configurator.exe**
Application that is used to edit the Stimulsoft Reports.Wpf configuration.

**Installer.exe**
Application that helps to install Stimulsoft Reports.Wpf into GAC. Also it helps in using the NGEN utility.

**Designer.Wpf.exe**
The Stimulsoft Reports.Wpf report designer.

## 16.3. Assemblies in Web

Stimulsoft Reports.Web is delivered with the following assemblies:

**Stimulsoft.Base.dll**
Baseline assembly of the report generator.

**Stimulsoft.Editor.dll**

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Text editor that is used in the report designer.

**Stimulsoft.Controls.dll**
Controls which are used in the report generator.

**Stimulsoft.Controls.Win.dll**
Controls which are used in the report generator.

**Stimulsoft.Report.dll**
Baseline assembly that contains the base functionality of the report generator.

**Stimulsoft.Report.Design.dll**
Assembly that contains the WinForms Designer.

**Stimulsoft.Database.dll**
This dll is used to create and edit connections string. Also this dll contains QueryBuilder.

**Stimulsoft.Report.Web.dll**
This assembly helps to show reports in ASP.NET and contains WebViewer.

**Stimulsoft.Report.WebDesign.dll**
Assembly that contains the Web Designer.

**Installer.exe**
Application that helps to install Stimulsoft Reports.Web into GAC. Also it helps in using the NGEN utility.

**Designer.exe**
The Stimulsoft Reports.Web report designer.

## 16.4. Assemblies in Designer.Web

Stimulsoft Reports Designer.Web is delivered with the following assemblies:

**Stimulsoft.Report.WebDesign.dll**
Assembly that contains the Web Designer.

## 16.5. Redistributable files in Reports.Net

The following assemblies and files of Stimulsoft Reports.Net can be delivered with the final application:

Stimulsoft.Base.dll
Stimulsoft.Controls.dll
Stimulsoft.Controls.Win.dll
Stimulsoft.Database.dll

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Stimulsoft.Editor.dll
Stimulsoft.Report.dll
Stimulsoft.Report.Win.dll
Stimulsoft.Report.Design.dll
Stimulsoft.Report.Web.dll
Localization files

## 16.6. Redistributable files in Reports.Wpf

The following assemblies and files of Stimulsoft Reports.Wpf can be delivered with the final application:

Stimulsoft.Base.dll
Stimulsoft.Database.Wpf.dll
Stimulsoft.Report.dll
Stimulsoft.Report.Check.dll
Stimulsoft.Report.Wpf.dll
Stimulsoft.Report.Wpf.BlackTheme.dll
Stimulsoft.Report.Wpf.Office2003BlueTheme.dll
Stimulsoft.Report.Wpf.Office2003OliveGreenTheme.dll
Stimulsoft.Report.Wpf.Office2003SilverTheme.dll
Stimulsoft.Report.Wpf.Office2007BlackTheme.dll
Stimulsoft.Report.Wpf.Office2007BlueTheme.dll
Stimulsoft.Report.Wpf.Office2007SilverTheme.dll
Stimulsoft.Report.Wpf.Office2010BlueTheme.dll
Stimulsoft.Report.WpfDesign.dll
Stimulsoft.Report.Helper.dll
Localization files

## 16.7. Redistributable files in Reports.Web

The following assemblies and files of Stimulsoft Reports.Web can be delivered with the final application:

Stimulsoft.Base.dll
Stimulsoft.Report.dll
Stimulsoft.Report.Web.dll
Stimulsoft.Report.WebDesign.dll
Stimulsoft.Report.WebFx.dll
Localization files

**The Stimulsoft.Report.Design assembly cannot be distributed. The licensing per number of developers is required.**

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## 16.8. Redistributable files in Report Designer.Web

The following assemblies and files of Stimulsoft Reports Designer.Web can be delivered with the final application:

Stimulsoft.Report.WebDesign.dll

## 16.9. Redistributable files in Reports.Silverlight

The following assemblies and files of Stimulsoft Reports.Silverlight can be delivered with the final application:

Stimulsoft.Base.SL.dll
Stimulsoft.Compression.SL.dll
Stimulsoft.Controls.SL.dll
Stimulsoft.Report.SL.dll
Stimulsoft.Report.SLDesign.dll
Stimulsoft.Report.Viewer.SL.dll
Stimulsoft.Report.WebSL.dll
Stimulsoft.Report.WebDesignSL.dll
Localization files

## 16.10. Redistributable files in Reports Designer.Silverlight

The following assemblies and files of Stimulsoft Reports Designer.Silverlight can be delivered with the final application:

Stimulsoft.Report.WebDesignSL.dll

## 16.11. Redistributable files in Reports.Ultimate

The following assemblies and files of Stimulsoft Reports Designer.Silverlight can be delivered with the final application:

Stimulsoft.Controls.dll
Stimulsoft.Controls.Win.dll
Stimulsoft.Base.dll
Stimulsoft.Database.dll
Stimulsoft.Database.Wpf.dll
Stimulsoft.Editor.dll
Stimulsoft.Report.dll

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Stimulsoft.Report.Check.dll
Stimulsoft.Report.Win.dll
Stimulsoft.Report.Web.dll
Stimulsoft.Report.WebFx.dll
Stimulsoft.Report.Wpf.dll
Stimulsoft.Report.Wpf.BlackTheme.dll
Stimulsoft.Report.Wpf.Office2003BlueTheme.dll
Stimulsoft.Report.Wpf.Office2003OliveGreenTheme.dll
Stimulsoft.Report.Wpf.Office2003SilverTheme.dll
Stimulsoft.Report.Wpf.Office2007BlackTheme.dll
Stimulsoft.Report.Wpf.Office2007BlueTheme.dll
Stimulsoft.Report.Wpf.Office2007SilverTheme.dll
Stimulsoft.Report.Wpf.Office2010BlueTheme.dll
Stimulsoft.Report.Design.dll
Stimulsoft.Report.DesignHelper.dll
Stimulsoft.Report.WebDesign.dll
Stimulsoft.Report.WpfDesign.dll
Stimulsoft.Base.SL.dll
Stimulsoft.Compression.SL.dll
Stimulsoft.Controls.SL.dll
Stimulsoft.Report.SL.dll
Stimulsoft.Report.SLDesign.dll
Stimulsoft.Report.Viewer.SL.dll
Stimulsoft.Report.WebSL.dll
Stimulsoft.Report.WebDesignSL.dll
Localization files

## 16.12. Deployment in Windows

For distribution Stimulsoft Reports assemblies together with the application it is enough to copy them to the folder where the application file is saved. Registration to GAC is not required. Registration of COM objects is not required. Registration in registry is not required. Using the NGEN utility is not required.

## 16.13. Deployment in Web

For distribution Stimulsoft Reports.Web together with a web application it is enough to copy them to the bin folder of an application. Registration to GAC is not required. Registration of COM objects is not required. Registration in registry is not required. Using the NGEN utility is not required.

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## 16.14. Deployment in Designer.Web

For distribution Stimulsoft Reports.Web together with a web application it is enough to copy them to the bin folder of an application. Registration to GAC is not required. Registration of COM objects is not required. Registration in registry is not required. Using the NGEN utility is not required. For working with the product Stimulsoft Reports.Net report generator is required.

## 16.15. Deployment Reports as Files

The most frequently used way of reports deployment is deployment reports as files. Stimulsoft Reports supports two type of files: unpacked report (the .mrt file extension) and packed reports (the .mrz file extension). Packed reports have small file size but it takes much time for saving and loading them. For loading the previously saved report the following code is required:

C#

```
StiReport report = new StiReport();
report.Load("report.mrt");
```

VB

```
Dim Report As StiReport = New StiReport()
Report.Load("report.mrt")
```

The following code is required to save a report:

C#

```
StiReport report = new StiReport();
report.Save("report.mrt");
```

VB

```
Dim Report As StiReport = New StiReport()
Report.Save("report.mrt")
```

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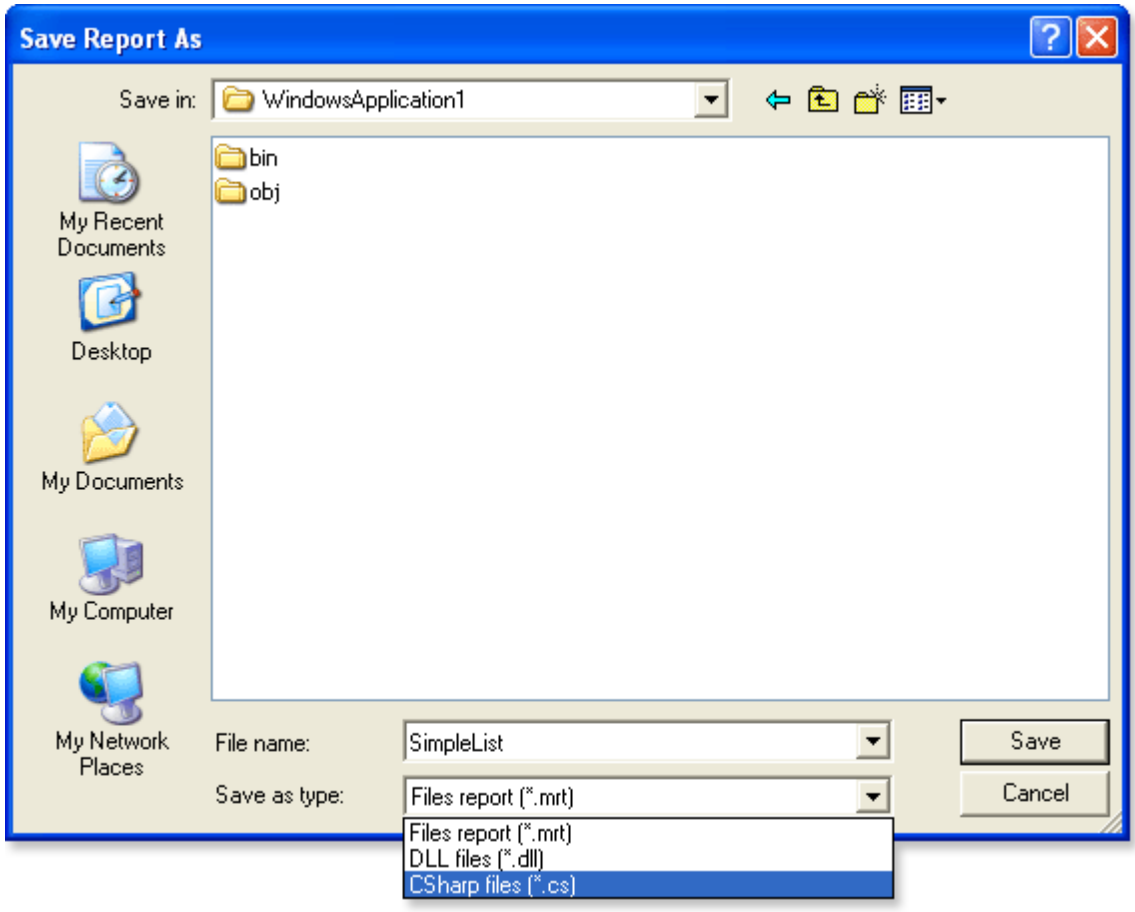
# 16.16. Reports as Source Code

For automatic generation a report code the standard **.NET Framework** languages are used. When using **C#**, it is possible to write the same code as in **Visual Studio.NET**. The same can be said about **VB.NET**, where a report code can be saved and in the **Visual Studio.NET** project. Use the **File | Save Report As...** menu for saving a report code




**Notice.** The report code is completely compatible with **C#** and **VB** languages. Therefore, the report code can be saved and used in the **Visual Studio.NET** project**.**

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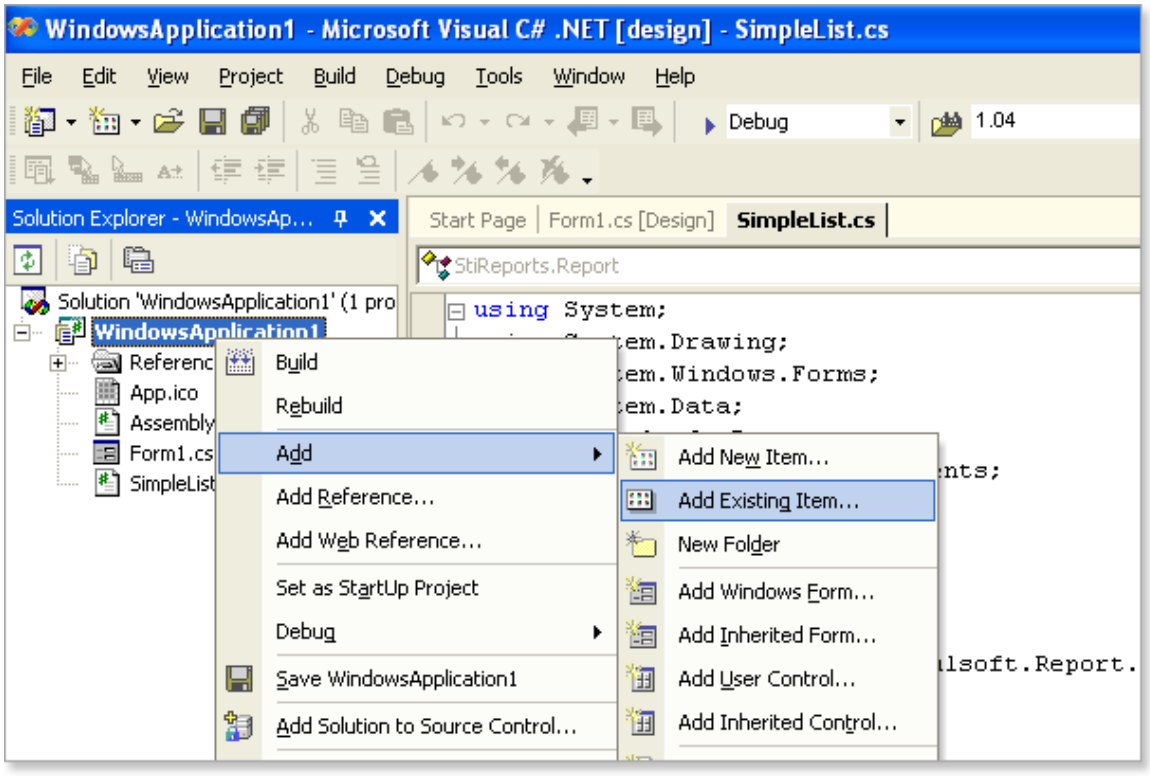


## 16.17. Reports as Assemblies

Stimulsoft Reports reports generation has the unique ability to compile reports to the .Net assembly. Framework. Use the **File | Save Report As...** menu for saving a report to the assembly.

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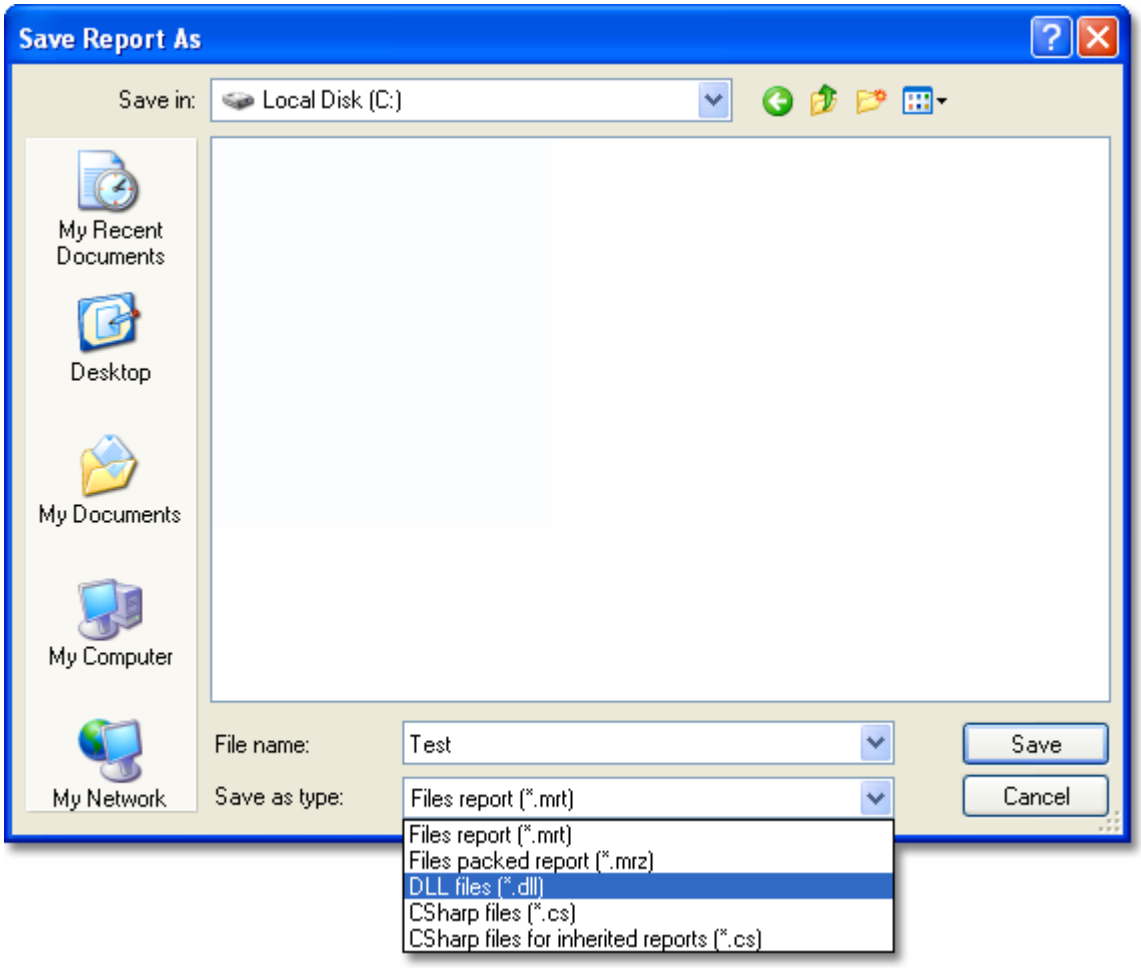


For loading a report from the assembly the following code is used:

C#

```
StiReport report = StiReport.GetReportFromAssembly("report.dll");
```

VB

```
Dim Report As StiReport = StiReport.GetReportFromAssembly("report.dll")
```

Reports, which are loaded from assembly, do not require compilation. It is impossible to edit such reports in the reports designer.

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## 16.18. Standalone Reports

It is required to use the program code to compile standalone reports. It is impossible to create standalone reports using the designer. The following code will create the standalone report:

```
StiReport report = new StiReport();
report.Load("report.mrt");
report.CompileStandaloneReport("report.exe", StiStandaloneReportType.Show);
```

```
Dim Report As New StiReport()
Report.Load("report.mrt")
Report.CompileStandaloneReport("report.exe", StiStandaloneReportType.Show)
```

It is important to remember that for working with standalone reports the Stimulsoft Reports libraries are required. Besides, the report should get all data itself.

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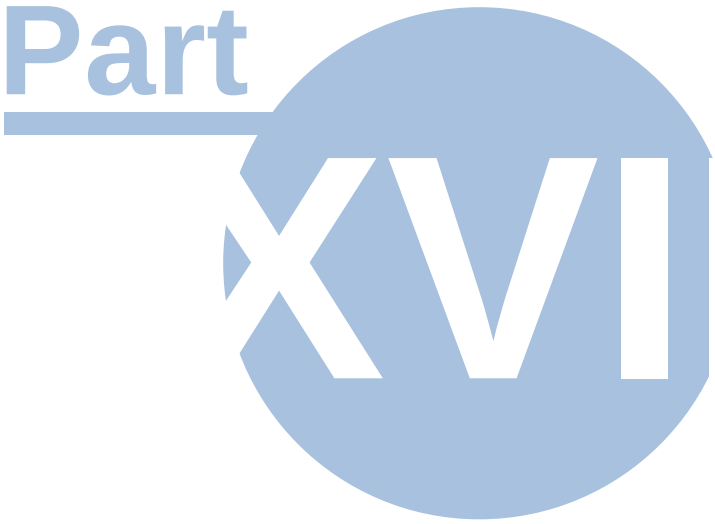


# Showing Reports in Viewer.Fx

# 17. Showing Reports in Viewer.Fx

The **Viewer.Fx** component is delivered with Stimulsoft Reports.Fx. This component is used to show reports in **Flex** applications.

## 17.1. How to Show Report?

Put the **Viewer.Fx** on the scene of a **Flex** application:

```
<viewer:StiViewerFx id="viewerFx" Left="0" right="0" bottom="0" />
```

Create, load and assign a report:

```
var report: StiReport = new StiReport();
report.loadDocumentFromString(documentString);
viewerFx.report = report;
```

documentString: String - .mdc file loaded as a string

Also, there is another way to show a report instead of placing **Viewer.Fx** on the scene of a Flex application:

```
var report: StiReport = new StiReport();
report.loadDocumentFromString(documentString);
report.showDialog();
```

report.show() - showing ViewerFx on the working space of the application

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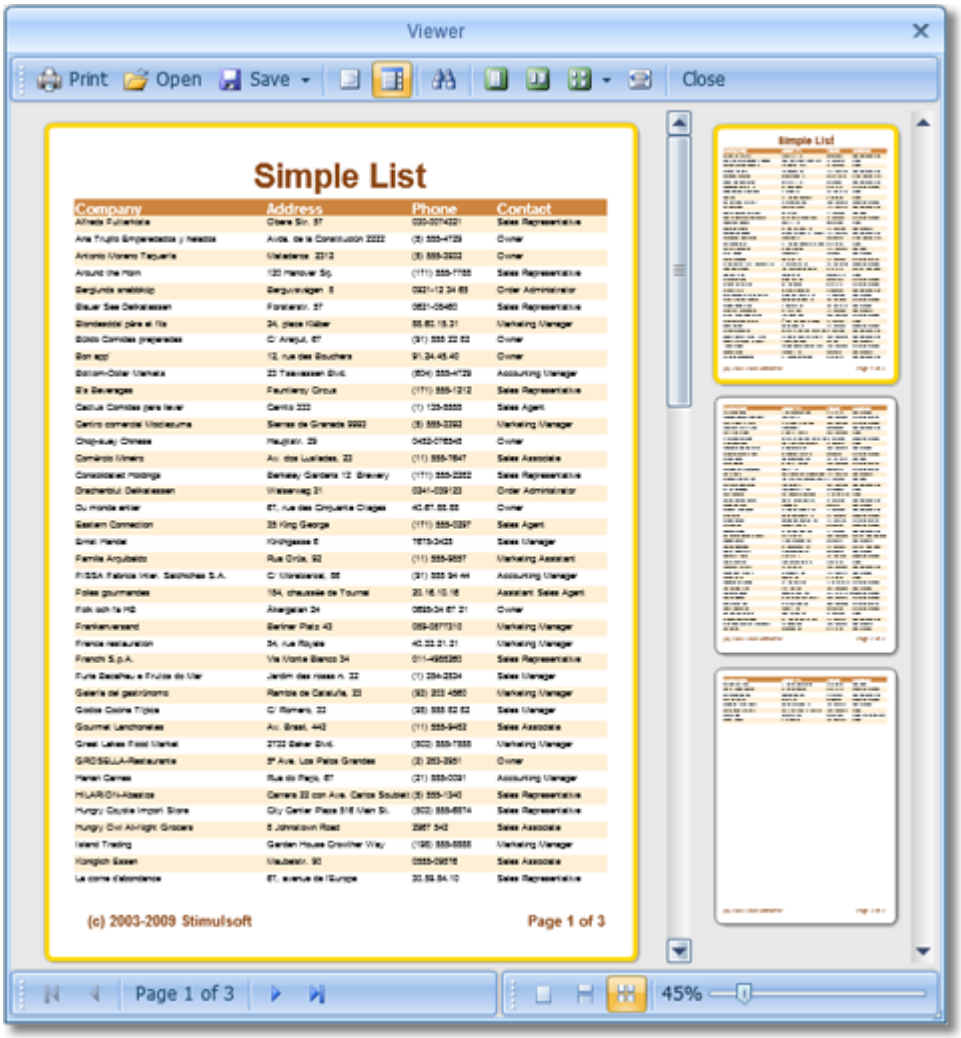


## 17.2. Dialog Options

If a report is shown in the dialog window, i.e. ability to set parameters of dialog window.

```
var report: StiReport = new StiReport();
report.loadDocumentFromString(documentString);
report.showDialog(rectangle: Rectangle, title: String, allowResize: Boolean, allowDrag: Boolean);
```

In example 4 parameters are described:

- **Rectangle** (position and dialog window size), is set as **Rectangle** (**x, y, width, height**), where **x,y** are indents from the top left corner of the application. By default **Rectangle (10, 10, application.width - 20, application.height - 20)**;
- **title** - is the window title. If the title is not set, then the window will have the "**Viewer**" title.

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- **allowResize** - this parameter allows changing window size. It may have two values: **true** and **false**. By default, the value is set to **false**, i.e. **it is impossible** to change window size.
- **allowDrag** - this parameter allows dragging dialog window. It may have two values: **true** and **false** . The default value is **false**, i.e. **it is impossible** to drag the dialog viewer window.

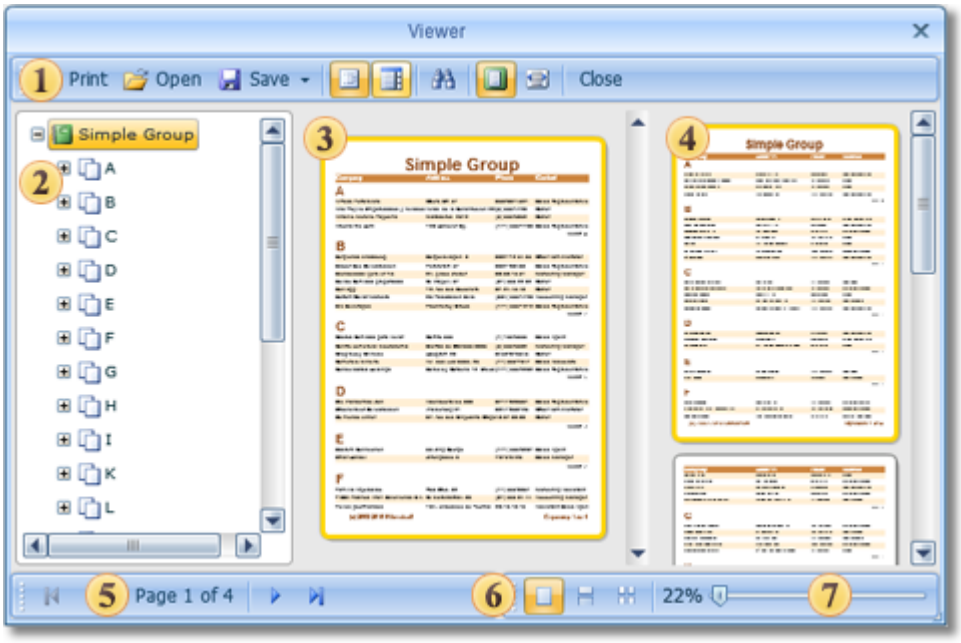
A sample of setting parameters:

```
var rect: Rectangle = new Rectangle(100, 100, 900, 600);
report.showDialog(rect, "Customized ViewerFx", true, true);
```

As seen from the sample:
1. Indent from the top left corner is **100** by **x**, **y** axes. Width **900**, height **600**.
2. The name of the dialog box is "**Customized ViewerFx**".
3. Changing size of the dialog window of viewer - **possible**.
4. Dragging the dialog window - **possible**.

## 17.3. Viewer.Fx Structure

On the picture below the structure of the report viewer is shown.




1 This toolbar is used to control a report..
2 Report bookmarks. Using these bookmarks it is possible to jump by structure elements of a report.
3 The area where a report is shown.

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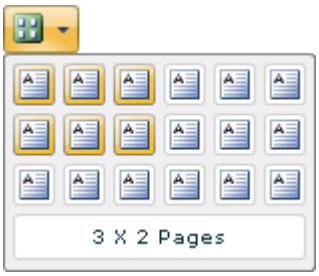
4 The report thumbnails panel. Decreased copies of a report are shown on this panel. The panel is used to quickly navigate throughout of a report.
5 The toolbar to scroll up or down in reports pages.
6 The toolbar to select the mode of report showing.
7 The toolbar for report zooming.

## 17.4. Basic Toolbar of Viewer

Main controls are placed on this toolbar. The picture below shows the structure of the toolbar:

1 Run report printing. After activation of this command the printing dialog with parameters of printing will be displayed.
2 Open previously saved report. Any rendered report can be saved to .mdc or .mdz format for further preview.
3 Save the rendered report to other file formats.
4 Show/hide the tree of bookmarks. If there are no bookmarks in the rendered report then the viewer will automatically hide the tree of bookmarks. If there are bookmarks in a report, then the viewer will automatically show the tree of bookmarks.
5 Show/hide the reports thumbnails.
6 Enable the search panel.
7 Change zoom of the report to display only one full page. More than one page by the width can be output.
8 Change zoom of the report to display two pages on the screen.
9 Change zoom of the report according to horizontal and vertical sizes of pages.




10 Change zoom of a report to fit a page width in the screen width.
11 Close viewer.

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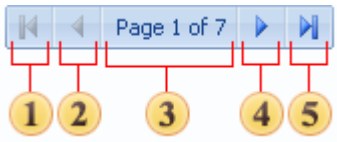
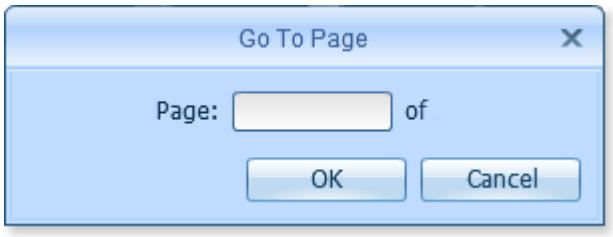
## 17.5. Page Navigation in ViewerFx

On the picture below the toolbar that is used for report navigation is shown.




1 Set the first page of a report as the current page.
2 Set the previous page of a report as the current one.
3 Show the number of the current page and the number of pages in a report. If click on it then it is possible to indicate the number of a page that should be the current.




4 Set the next page of a report as the current one.
5 Set the last page of a report as the current page.

## 17.6. Page View Modes

The WebViewerFx supports three modes of viewing pages:
**1. Single Page**
**2. Continuous**
**3. Multiple Pages**

Three buttons are used to control the page view mode. They are placed at the bottom of the viewer in the right corner.

Each mode has its own advantages.
**Single page.** In this mode the current page of a report is shown in the window of the viewer. The picture below shows how this mode works.

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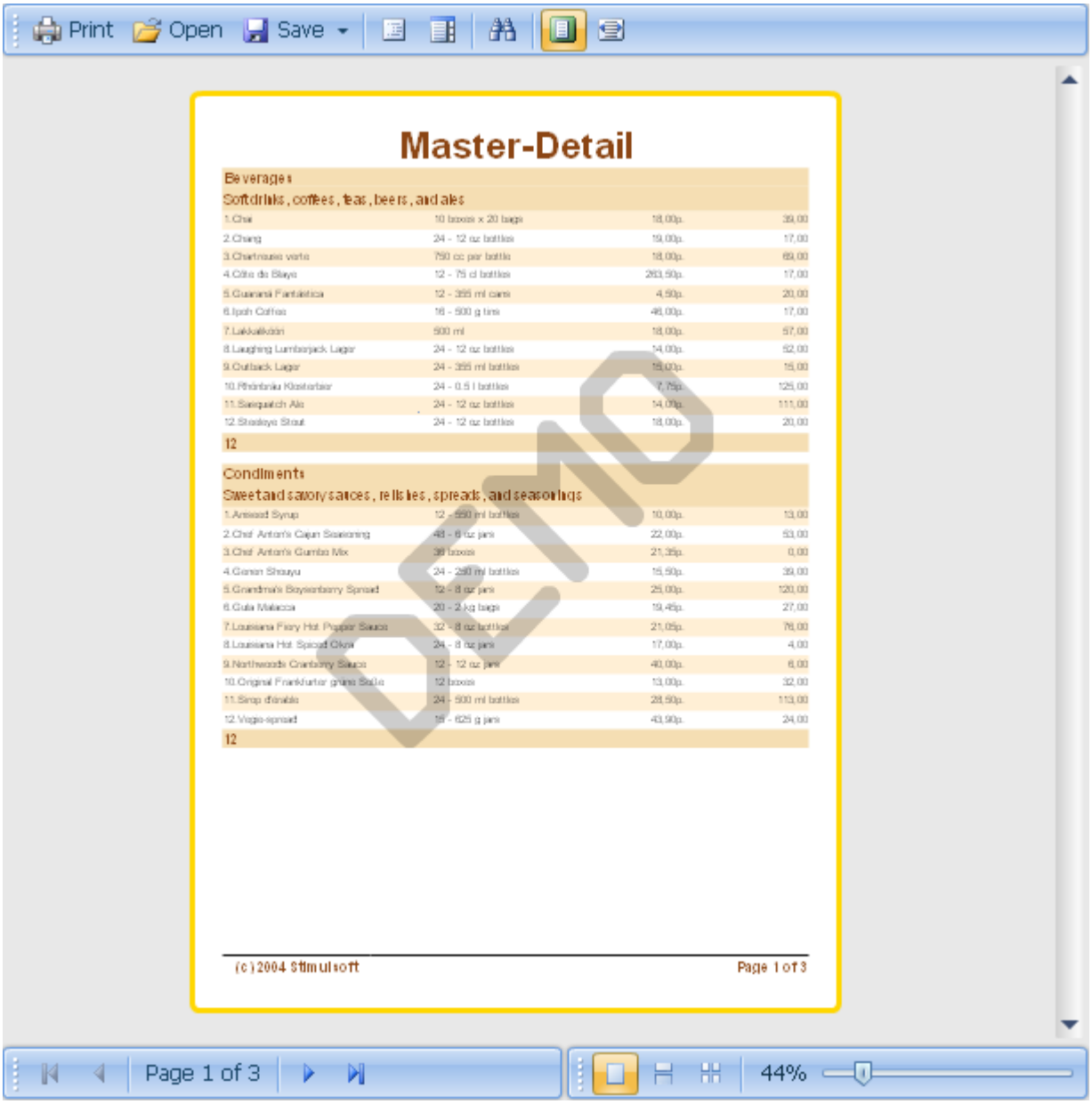
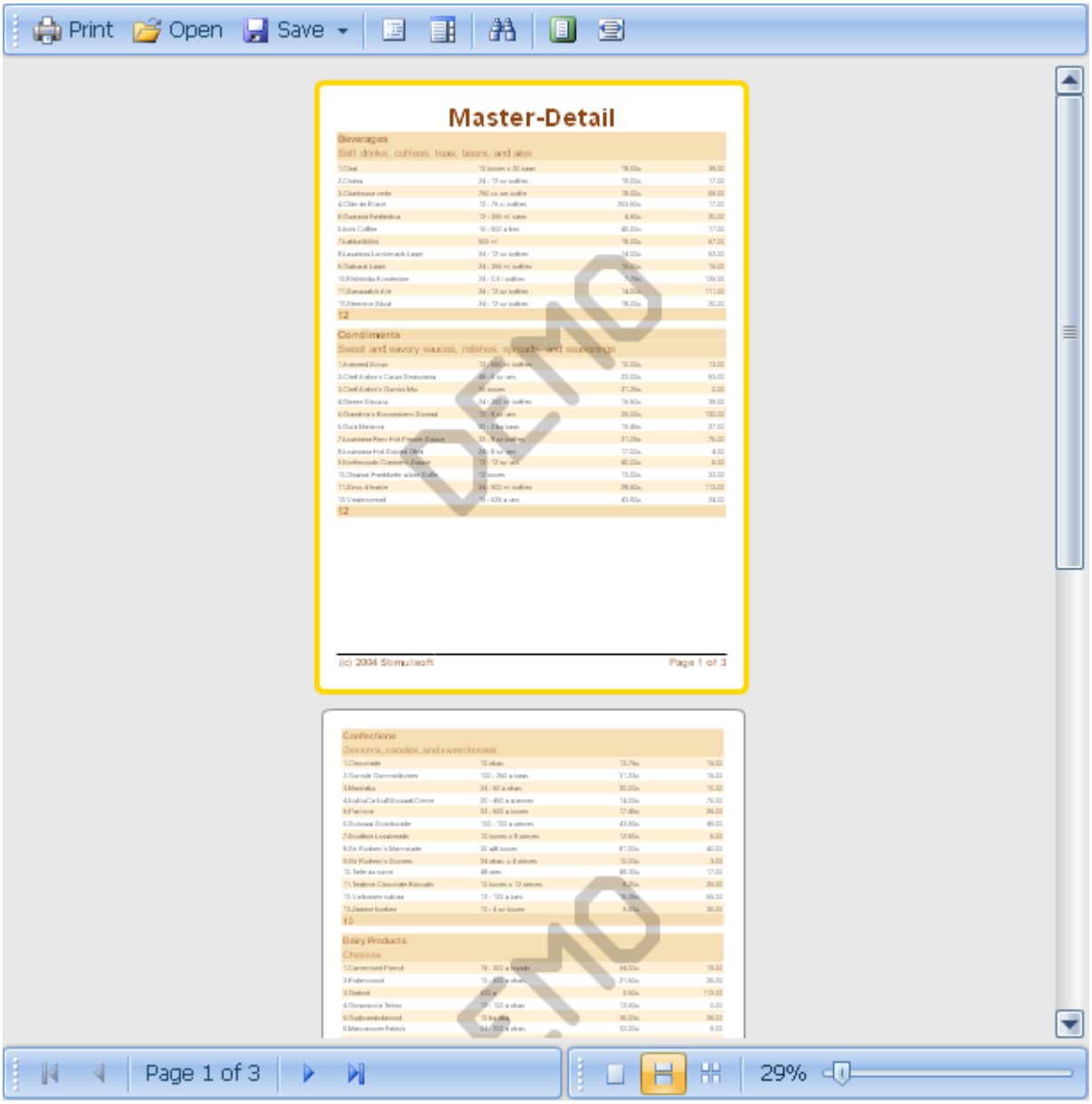



**Continuous.** In this mode all pages are placed into one vertical line. The picture below shows how this mode works.




**Multiple Pages.** In this mode as many pages in the selected zoom as they can fill the window of the viewer are shown. The picture below shows how this mode works.

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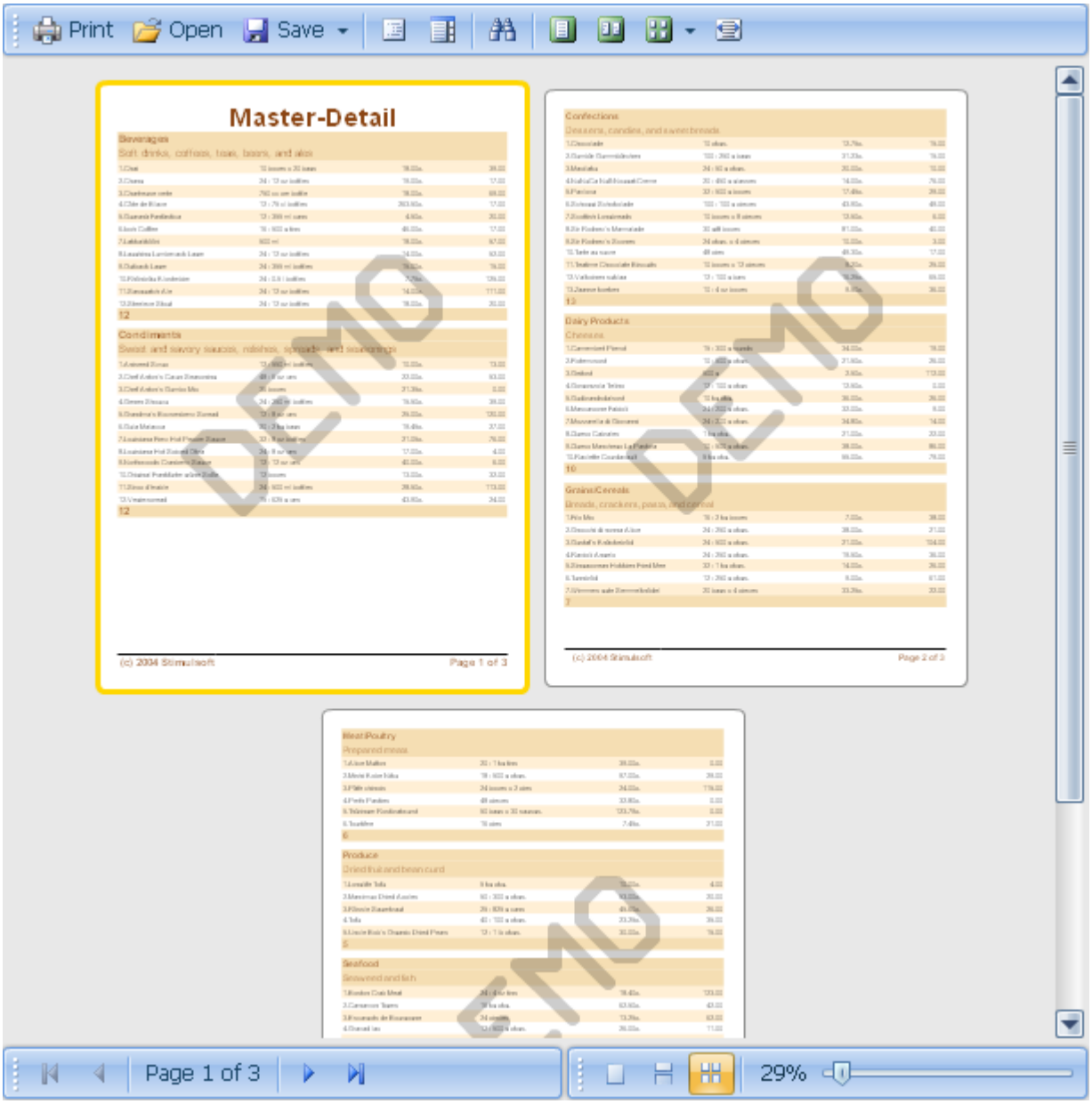


## 17.7. Search Panel

The search panel is used to search some text in the report. On the main toolbar this option can be enabled by clicking the binocular icon. All controls for search are placed on a single panel.

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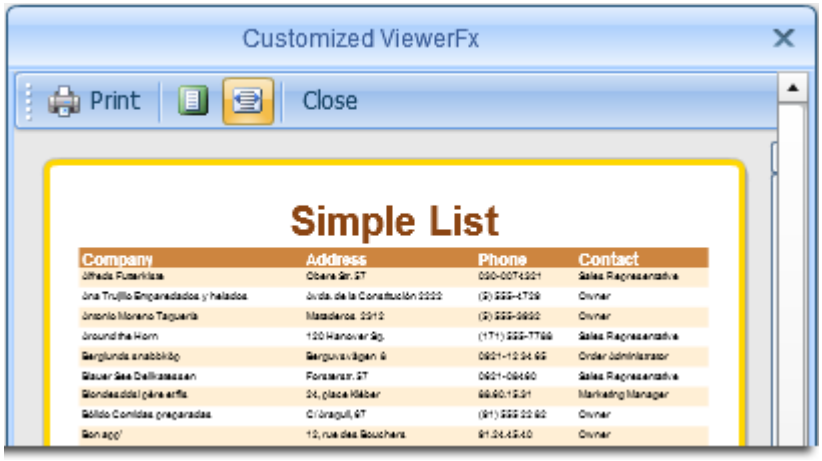
1. Close the search panel.
2. The text that should be found.
3. The button to run search.
4. If the flag is set, then search will be repeated considering the case.
5. If the flag is set, then search will be done considering the whole word.

## 17.8. User Interface Settings

It is possible to setup user interface, i.e. it is possible to hide some buttons or panels.




On the picture above only 4 buttons of 9 are shown.
The code below shows how to get this result:

```
StiOptions.viewer.toolbar.showOpenButton = false;
StiOptions.viewer.toolbar.showSaveButton = false;
StiOptions.viewer.toolbar.showThumbnailsButton = false;
StiOptions.viewer.toolbar.showBookmarksButton = false;
StiOptions.viewer.toolbar.showFindButton = false;
```

In other words each button has the show function. This function has two values: **true** or **false**. The default value of this function is **true**.

### The list of available buttons

On the toolbar:

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- StiOptions.viewer.toolbar.showPrintButton - Print button;
- StiOptions.viewer.toolbar.showOpenButton - Open button;
- StiOptions.viewer.toolbar.showSaveButton - Save button
- StiOptions.viewer.toolbar.showBookmarksButton - Bookmark button;
- StiOptions.viewer.toolbar.showThumbnailsButton - Thumbnails button;
- StiOptions.viewer.toolbar.showFindButton - Find button;
- StiOptions.viewer.toolbar.showCloseButton - Close button.

On the Navigation toolbar:
- StiOptions.viewer.toolbar.showFirstPageButton - First Page button;
- StiOptions.viewer.toolbar.showPreviousPageButton - Previous Page button;
- StiOptions.viewer.toolbar.showGoToPageButton - GoToPage button;
- StiOptions.viewer.toolbar.showNextPageButton - Next Page button;
- StiOptions.viewer.toolbar.showLastPageButton - Last Page button.

On the View Page toolbar:
- StiOptions.viewer.toolbar.showPageViewModeSingleButton - Single Page button;
- StiOptions.viewer.toolbar.showPageViewModeContinuousButton - Continuous Page button;
- StiOptions.viewer.toolbar.showPageViewModeMultipleButton - Multiple Page button.

Also it is possible to disable the Zoom panel, see the following:

```
StiOptions.viewer.toolbar.showZoom = false
```

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